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A BRIEF
HISTORY
OF
EPIDEMIC AND PESTILENTIAL DISEASES;

WITH THE

PRINCIPAL PHENOMENA OF THE PHYSICAL
WORLD, WHICH PRECEDE AND ACCOMPANY THEM,

AND

OBSERVATIONS DEDUCED FROM THE
FACTS STATED.

IN TWO VOLUMES.

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VOL. I.

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ADVERTISEMENT.

THE work quoted under the title of "Magdeburgh Hiſtory," is a compilation of Eccleſiaſtical Hiſtory made by ſeveral writers at Magdeburgh, and divided into centuries.

The work quoted under the title of "Hiſt. Auguſt." is a collection of the hiſtories of the Roman affairs under the Emperors.

The work cited under the title of "Angl. Script," is a collection of the early hiſtorians of England.

The work cited under the title of "Germ. Script," is a collection of the ancient hiſtories of Germany, by Piſtorius.

In a few inſtances, authors are cited without the page or chapter. This has ariſen from the manner in which my materials were obtained—which was to tranſcribe paſſages from books wherever I found them, in public or private libraries, and ſometimes, when books fell in my way by accident, without the intention of uſing them as authorities. The inſtances however are not numerous, and the paſſages may generally be found with eaſe by the index or chronological order of the work. Since I have had it in view to publiſh this treatiſe, and eſpecially ſince diſcovering a diſpoſition in ſome perſons to decry this attempt to inveſtigate truth, by charging me with a deſign to collect facts for the purpoſe of ſupporting preconceived opinions, I have been more careful to note my authorities. This muſt be my apology for citing ſo many authorities, which might otherwiſe appear like affectation.

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ERRORS.

PAGE 37, line 9, from bottom, read *ſiccitate.*
44, line 10, read *metu.*
76, line 16, read *Lampridius.*
87, line 3, from bottom, after *cold*, place a comma.
104, line 22, read *deacon.*
106, line 2, read *inguinaria.*
156, line 9, read *Alkmar;* alſo in page 174, line 12.
169, line 4, from bottom, read *Penrith.*
204, line 18, after *petechial*, read *fever.*
241, line 3, read 1750.
260, line 18, for *of* read *or.*

IN page 255 a fact is ſtated which contradicts the ſtatement reſpecting the planet Mars in page 241. There is an error in one of the ſtatements; and I leave aſtronomers to determin by calculations which of the authorities, Ames' Almanac for 1750, or the Annual Regiſter, is wrong. The error is not material to my ſubject. The only queſtion of conſequence, is, whether the near approach of Mars had any influence, in producing the extreme heat of 1749 and 1766—a queſtion I pretend not to determin.

INTRODUCTION.

A PUBLICATION on the ſubject of diſeaſes, from the pen of a man who has never before turned his attention to medical ſcience or to chymiſtry, is a circumſtance, which, if it does not require an apology, demands at leaſt an explanation.

The prevalence of the catarrh, commonly called influenza, in the years 1789 and 90, firſt awakened my curioſity on the ſubject of epidemic diſeaſes. A journey which I made in October 1789, from Hartford to Boſton; and another in March 1790 from Hartford to Albany; led me to obſerve the *progreſſiveneſs* of that diſeaſe, with its other phenomena.

The appearance of the ſcarlatina anginoſa in 1793 revived my curioſity, and a ſimilar circumſtance, a journey from Hartford to New-York in April of that year, led me to obſerve a progreſſion in that diſeaſe from Weſt to Eaſt. A ſlight attack which my own children ſuffered, in May following, together with a ſimilar attack of many other children in Hartford, and its more violent effects ſome months after, convinced me that the epidemic was *progreſſive* in *malignancy*, as well as in regard to *place*.

Had no other epidemic appeared, my curioſity would probably have ſubſided and been extinguiſhed. The malignant fever in New-York in 1791, had excited alarm in that city, and was a ſubject of notice in Hartford where I then reſided; but no idea had been conceived, that it was connected with a peſtilential ſtate of the air, in the United States, which was afterwards to produce more ſerious and general calamities.

In autumn 1793 however that peſtilential ſtate of air arrived to its criſis in Philadelphia, where the mortality occaſioned by the yellow fever, ſpread deſtruction and diſmay, from Auguſt to November. The fatality of the diſeaſe ſpread conſternation thro the United States, and excited apprehenſions in Europe.

No American citizen could be indifferent to the prevalence of this diſeaſe in his own country. Still it was conceived that the diſtemper might have been produced from imported infection, and that a more rigid execution of the laws relating to quarantine, might prevent a repetition of the calamity. Here reſted apprehenſion and enquiry.

But this tranquillity was of ſhort duration. The appearance of the ſame diſeaſe in New-Haven in 1794, and in New-York, Baltimore and Norfolk in 1795, revived my curioſity, with double zeal to ſearch out the cauſes of theſe phenomena, ſo unuſual in this country. The facts which had come to my knowledge, relating to the origin and propagation of this diſeaſe, led me to ſuſpect the common theory of *infection* to be ill-founded. But as a preliminary to all other enquiries, it appeared neceſſary to ſettle the controverſy relative to the *imported* or *domeſtic* ſources of the diſtemper; for without a deciſion of this queſtion, legiſlative and police-regulations, for preventing a return of the evil, or mitigating its ſeverity, would probably be fruitleſs.. The queſtion appeared to be extremely important, and the differences of opinion on the ſubject, among medical gentlemen, ſeemed to preclude the poſſibility of a deciſion among them, that ſhould ſilence doubts in the public mind.

In this ſituation of the controverſy, I reſolved to make an effort to obtain evidence which might decide the point, in one way or the other; and as facts only can be relied on as a ſure baſis of principles and theory, I determined to make a collection of facts, from all parts of the United States, where the yellow fever, or other malignant fevers had prevailed, during the preceding years. For this purpoſe, on the 31ſt of October 1795, I addreſſed a circular letter to the phyſicians of Philadelphia, New-York, Baltimore, Norfolk, New-Haven, and in general, throughout the United States, requeſting them to communicate to me whatever facts had come within their obſervation, which could throw light on the queſtion of the foreign or domeſtic origin of the yellow fever. In conſequence of which I received a number of communications, which were publiſhed in 1796, and to which is prefixed my circular letter.

Theſe communications, tho leſs numerous and ſatisfactory than were deſirable, united with a multitude of facts within my own obſervation, *convinced* me of the fallacy of the vulgar opinion, reſpecting the origin of the yellow fever in the United States, from imported ſources. I found repeatedly that the reports of perſons taken ill, in conſequence of intercourſe with veſſels from the

Weſt-Indies, or with diſeaſed ſeamen, infected cotton or clothing, or the like cauſes, were mere idle tales, raiſed by the ignorant or intereſted, and wholly unſupported by evidence. Scarcely an inſtance could be found, in which the evidence of the propagation of diſeaſe, from imported infection, was ſufficient to render the fact even probable.

On the other hand, the evidence of the origination of the diſeaſe in New-York, Baltimore, Norfolk, Newburyport, Boſton and Charleſton, appeared to be clear and ſatisfactory. In moſt of thoſe places, the fact has never been queſtioned.

When the ſame diſeaſe appeared in Philadelphia in 1797; the queſtion of importation or domeſtic origin, again agitated the faculty and the public. The revival of the diſcuſſion, and particularly, certain publications of Dr. William Currie, in the Philadelphia prints, called forth my exertions to unite opinions and ſave the citizens of this country from the diſtraction of meaſures, which muſt neceſſarily follow a diviſion of opinions. I conſidered and ſtill conſider the queſtion as reſting principally on fact, and not on medical ſkill; therefore proper to be inveſtigated and diſcuſſed by any man who has leiſure and means, as well as by phyſicians.

Theſe conſiderations gave riſe to the obſervations which I addreſſed to Dr. Currie, thro the medium of the public papers, in the months of October, November and December 1797. The deſign of theſe obſervations was originally limited to the purpoſe of proving the yellow fever of our country to be generated by local and domeſtic cauſes, by laying together the facts which I had collected from various parts of the United States, without any intention of examining the hiſtory and phenomena of peſtilential diſeaſes in other countries, and other periods of the world.

In purſuing this object however, I was led inſenſibly to examin all the books I could find, on the ſubject of the plague; and the ſubject being new, I found too much pleaſure in proſecuting it, readily to abandon the purſuit. Facts which were new to me were daily preſenting themſelves to my mind; and after three months inveſtigation, I was perſuaded that thoſe facts are of too much importance to philoſophy, to medicin and to human happineſs, not to merit publication. Such is the origin of the preſent treatiſe.

When I began my enquiries into the origin of the yellow fever, in 1795, I had no preconceived ſyſtem to maintain. My view was to collect facts and from them to deduce TRUTH. It is not my intention to advance theory over fact; but as far as juſt philoſophy and ſound logic will permit, draw theory from facts, and if poſſible, by fair reaſoning, from the uniform operations of nature, to arrive at fixed principles. If conjectures ſhould in any inſtance be advanced, they will be offered as ſuch, and not as the baſis of practice.

As there is a difference of opinion in regard to the cauſes of the plague, and other peſtilential diſeaſes, as well as in regard to the identity of the yellow fever and plague, I ſhall define my manner of uſing certain terms, which will often occur in the following work.

That peſtilential diſeaſe which uſually, in the Levant, produces ſwellings in the glands, as buboes, I ſhall call the *glandular* or *inguinal* plague.

The peſtilential diſeaſe which has afflicted ſome of the cities in America, and is uſually called yellow fever, I ſhall denominate, the *bilious* or *American plague*.

In the Levant plague, ſwellings in the groin, in the arm-pits, and behind the ears, do not, in every caſe, appear; but they are the general diſtinguiſhing marks of the true peſtis or plague.

In the yellow fever, the ſkin is not, in every caſe, marked by a yellow color; but it is generally the fact, and therefore this form of peſtilence may very well take its denomination from that circumſtance of its bilious appearance.

Whether theſe are diſeaſe ſpecifically diſtinct, or only the ſame diſeaſe varied and modified by climate, ſeaſon or other circumſtances, is a queſtion that belongs to the faculty. It is ſufficient for my purpoſe to obſerve, that in moſt of the ſymptoms, they agree—that they are peſtilential and greatly to be dreaded by mankind. I ſhall therefore treat them as different forms of the ſame diſeaſe. There may be ſome cauſe for believing that the moiſture of a country, abounding with woods, and marſhy grounds, may occaſion the difference in the color of bodies which fall victims to peſtilence.

The words *infection* and *contagion*, are uſed by medical writers and in popular cuſtom, as ſynonymous, and their etymologies warrant the practice. But I conceive there are diſtinctions in this quality or power of diſeaſes, of communicating themſelves by contact or near approach, which require to have each its appropriate language.

That quality of a diſeaſe which communicates it from a ſick to a well perſon, on ſimply inhaling the breath or effluvia from the perſon of the diſeaſed, at any time and in any place, may be called *ſpecific contagion.* Such is the contagion of the ſmall-pox and the meaſles, which are therefore called *contagious* diſeaſes.

That quality of a diſeaſe which, tho inſalutary will not communicate it, without the aid of other cauſes, as warm weather, or peculiar ſituation and habit of body, and which requires the healthful perſon to be a conſiderable time, under its influence, to give it effect, may be called *infection.* Such is the quality of the plague, in all its forms, dyſentery, and all typhus fevers. It may perhaps be poſſible for the effluvia of thoſe who have theſe diſeaſes, to be ſo concentrated and virulent, as to communicate them to a perſon in health, by a ſingle inſpiration of air into the lungs. But if ſuch can be the caſe in any inſtance, it is not the ordinary ſtate of thoſe diſeaſes. Even in the plague, many attendants on the ſick never receive the diſeaſe at all; and in moſt caſes, healthful perſons may, for hours, breathe the air of the rooms where the patients are, without any injury.

Hence infection is capable of all degrees of activity and force, from a ſlight impurity of air, which affects no perſon in health, to that virulent ſtate of air, which will produce vomiting in a perſon ſuddenly expoſed to it. *Infection* is uſually rendered inactive by ſevere cold; *ſpecific contagion* is never deſtroyed, but often rendered more active by cold. Hence the winter in northern latitudes uſually puts an end to the plague, but makes no favorable alteration in the ſmall-pox. There are ſome exceptions to this remark, as it regards the plague, which will be noticed in the following work.

Theſe diſtinctions, which will appear, in the courſe of this treatiſe to be well founded, have never been defined or uſed by European phyſicians, ſo far as my information extends; and to the want of them, are to be aſcribed many errors and abſurdities in opinion, as well as warm controverſies in regard to the contagion of the plague.

That ſtate of our atmoſphere which produces diſeaſe, or diſpoſes the body to diſeaſe, independent of other cauſes, I call *general* or *primary* contagion. Synonymous with theſe phraſes, will be uſed a peſtilential ſtate or conſtitution of the air.

The word *peſtilence* may be uſed as ſynonymous with plague; or as expreſſing all kinds of contagious and infectious epidemics. I have uſed it in both ſenſes; and often to expreſs an idea of that ſeries of epidemics which are cloſely connected with the plague.

Whether theſe diſtinctions are juſt or not, is not very material; it is ſufficient that they will expreſs my ideas in the following treatiſe.

SECTION I.

Of the diverſity of opinions reſpecting the cauſe and origin of peſtilence.

FROM the date of the earlieſt hiſtorical records, the opinions of men have been divided on the ſubject of the cauſes and origin of peſtilential diſeaſes. All enquiries of the philoſopher and the phyſician have hitherto been baffled, and inveſtigations, often repeated, have ended without leading to ſatisfactory concluſions.

In the hiſtory of opinions on this myſterious ſubject, there is a remarkable diſtinction between the ancients and moderns. The ancients derived moſt of their knowledge and ſcience from perſonal obſervation, as they had very few books and little aid from the improvements of their predeceſſors. The philoſophers of antiquity, attentive to changes in the ſeaſons and to the revolutions of the heavenly bodies, attempted to trace peſtilential diſeaſes to extraordinary viciſſitudes in the weather, and to the aſpects of the planets. Modern philoſophers and phyſicians, on the other hand, unable to account for peſtilence on the principle of extraordinary ſeaſons, and diſdaining to admit the influence of the planets to be the cauſe, have reſorted to inviſible animalculæ, and to infection concealed in bales of goods or old clothes, tranſported from Egypt or Conſtantinople, and let looſe, at certain periods, to ſcourge mankind and deſolate the earth.

In both periods of the world, the common maſs of people, uſually ignorant and always inclined to believe in the marvellous, have cut the Gordian knot of difficulty, by aſcribing peſtilence to the immediate exerciſe of divine power; under the impreſſion that the plague is one of the judgments which God, in his wrath, inflicts on mankind to puniſh them for their iniquities.

Without deciding on the comparative merit of theſe reſpective opinions, it is ſufficient to obſerve, that they are all probably incorrect; and thoſe of the philoſophers, altogether inadequate to explain the origin of peſtilential Epidemics.

It may however be of uſe to inſert, in this place, the explanations of the cauſe of peſtilence, given by ſome of the principal writers on the ſubject.

Hippocrates, the father of medical ſcience, and a man of very acute obſervation, conſidered peſtilence as the effect of particular ſeaſons and winds. A peſtilential ſtate or conſtitution of air he deſcribes, as occaſioned by a continuation of ſoutherly winds, and a warm, humid, clouded atmoſphere.

De morbis vulgaribus, lib. 3.

Galen followed the ſame theory. He ſays that peſtilent diſeaſes ariſe from a putridity of the air; and in another place, *a cœli ſtatu*, from the ſtate of the air or weather.

p. 627, in Hippoc.—

It will at once occur to an intelligent reader, that a particular deſcription of weather, producing peſtilence, muſt be principally calculated for a particular country or latitude. The ſtate of ſeaſons which Hippocrates calls *peſtilential*, is evidently calculated to produce or augment autumnal diſeaſes in temperate latitudes; and is preciſely the ſtate of weather which exiſted in the United States in 1795, when the bilious plague prevailed in the cities of New-York, Baltimore and Norfolk. But it does not correſpond with the ſeaſon in 1793, when the ſame diſeaſe raged in Philadelphia; for that was exceſſively dry, nor with the ſummer of 1797, which was temperate, in reſpect to heat, cold and moiſture.

Hippocrates indeed ſeems to have been aware that the ſeaſons alone were not ſufficient to account for peſtilence, for he ſpeaks of *to theion*, ſome divine principle in the air, by which modern writers of celebrity ſuppoſe to be intended what is now called an *epidemic conſtitution*, reſulting from changes in the atmoſphere produced by unknown cauſes. Ariſtotle prob. 1. relates that a hot and dry ſouth wind will produce peſtilence.

The philoſophical warrior and hiſtorian, Ammianus Marcellinus, after mentioning a plague which broke out in Amida, a city of Perſia, when beſieged by Sapor A. D. 359, from the corruption of numerous dead bodies which lay unburied in the ſtreets, proceeds to unfold the cauſes of peſtilential diſtempers, in the following manner.

" Philoſophers and eminent phyſicians have taught that peſtilence is produced by exceſs of heat or cold, of drouth or moiſture. Whence it is that thoſe who live near wet and marſhy places are ſubject to coughs, diſeaſes of the eyes and the like. Thoſe, on the other hand, who reſide where the heat is great, are troubled with febrile complaints; and in proportion as the matter of fire is more active, drouth is more rapid in deſtroying life. Hence, during the war of ten years in Greece, this ſpecies of diſeaſe prevailed, and it was ſaid that men periſhed by the *weapons of Apollo*, by which was ſuppoſed to be meant, the *heat of the ſun*. And, according to Thucydides, the mortality among the Athenians, in the beginning of the Peloponneſian war, was occaſioned by an acute diſeaſe, which proceeded from the fervid regions of Ethiopia, and gradually extended to Attica.

" Others are of opinion that air, like water, vitiated by the effluvia of dead bodies, or ſimilar ſubſtances, is deprived of its ſalubrity; or at leaſt that a ſudden change of air will produce the more ſlight complaints. Some alſo affirm that the air, rendered groſs by a denſer vapor from the earth, cloſing the pores of the body and checking perſpiration, becomes fatal to the lives of ſome; for which reaſon, other animals than man, which are continually bending towards the earth, are the firſt victims to peſtilence, as Homer teſtifies, and which is proved by many examples, during the prevalence of peſtilential diſeaſes.

" The firſt ſpecies of plague is called *pandemic*, and this afflicts moſt ſeverely thoſe who are ſubject to exceſſive heat, in hot regions. The ſecond is denominated *epidemic*, which when it rages, obſcures the ſight and excites dangerous humors. The third Lamodes, which is temporary, but produces ſudden death."

Lib. 19.

The hiſtorian has here explained the cauſes of ordinary diſeaſes, occaſioned by extremes of weather, marſh effluvia, vitiated air, and the direct action of violent heat, or ſtroke of the ſun. No perſon will diſpute the juſtneſs of his remarks, for the ſame cauſes, at this day, produce the ſame effects. But the cauſes aſſigned are not adequate to all the effects, which we wiſh to explain. They do not uniformly occaſion peſtilence ; and on the other hand, peſtilence ſometimes rages without the influence of thoſe cauſes.

Ætius, an eminent phyſician, about the cloſe of the 5th century, compiled the opinions and methods of cure practiſed by the moſt celebrated of his predeceſſors. In this compilation, entitled " Tetrabiblos," chap. ix. we find the following paragraph on the ſubject of Epidemic diſeaſes.

" Thoſe are called popular or epidemic diſeaſes, which ſpring from a common cauſe, as bad food or water, immoderate grief or want of cuſtomary exerciſe, hunger or repletion, eſpecially when abundance ſucceeds extreme want. But the nature of the country often cauſes epidemic diſeaſes : the air we breathe being vitiated by the evaporation from putrid ſubſtances. Theſe ſubſtances are multitudes of dead bodies after battles, marſhes or ſtagnant water in the vicinity, which emit poiſonous and fetid vapours.—This cauſe is in continual operation. And the air which ſurrounds us, always changes its temperament, when it becomes immoderately hot or cold, dry or humid. To other cauſes we are not all equally expoſed, nor at all times ; but the circumambient air, when we are abroad, ſurrounds us all alike, and is inhaled with the breath.

" Sometimes the ſurrounding air, becoming unuſually humid and hot, induces a peſtilential conſtitution ; and as humors, tending to putrefaction, are collected in the body by eating unwholeſome food, this air becomes the ſource of a peſtilential fever. Therefore if a perſon takes moderate exerciſe, and is temperate and regular in his diet [victu modeſto ac caſtigato] he wholly eſcapes all affections of this kind."

Such were the opinions of the phyſicians and philoſophers of antiquity. No diſtinction appears to have been made by them, between the plague and other peſtilential diſeaſes. All were aſcribed to the ſame cauſes.

At what time the diſtinction between *Peſtis* and *Peſtilentia* was firſt made, has not occurred to my enquiries. But I find it in the writings of Proſper Alpinus, a Venetian phyſician, who wrote about the cloſe of the 16th century, and who had been, for ſome years, a practitioner in Egypt. This author maintains that peſtilent fevers are occaſioned by local cauſes, as vitiated air, and by peculiarities of ſeaſon, as extreme heat and humidity. But he aſſerts that the plague in Egypt rarely proceeds from corrupted air, and never, except after an unuſual overflowing of the Nile, when that river has exceeded its common bounds. He contends that if this diſeaſe was produced by noxious exhalations from putrid and ſtagnant water, and marſhy places, it would occur every year. He therefore concludes for certain that the plague is uſually imported from Greece, Syria, Barbary, or Turkey. " Plerumque igitur id genus morbi ibi contagio ex aliis locis aſportari ſolet." The contagion of the plague is uſually imported from other countries.

Rerum. Egypt. vol. 2, p. 73, vol. 3, 61, and vol. 4, 299.

The ſame author aſſerts that the plague brought from Barbary is more malignant and of longer duration, than when brought from Greece or Syria.

Diemerbroeck, an eminent Dutch phyſician of the laſt century, has recorded an account of a violent plague in Nemueguen in 1636, and ſubjoined to it the beſt treatiſe on the origin of that diſeaſe, which I have been able to find, tho in one or two particulars, his ideas are very inaccurate. This author, whoſe treatiſe, I am ſurpriſed to find, is little known in this country, aſſigns three cauſes of the peſtis or true plague. Firſt, the juſt anger of heaven, provoked by the exhalations from the ſinks of our ſins and abominable deeds. Secondly, a moſt malignant, poiſonous, and to human nature, deadly peſtilent germ, [ſeminarium,] like a ſubtle fermentum or leaven, ſent from heaven, in a very ſmall quantity, diffuſing itſelf through the air like a ſubtle gas, and rendering it impure. This gas, he ſuppoſes to ſpread over many regions its numerous particles, and to impreſs on the air an infection like poiſon, which often affects not only many perſons, but almoſt the whole world.

However whimſical we may think this author's explanation of the peſtilent principle; that ſome ſuch general cauſe exiſts in the atmoſphere, at certain periods, will be rendered very probable, if not certain, by the facts hereafter to be related.

The "ſeminarium e cœlo demiſſum" of Diemerbroeck ſeems to be the *to theion* of Hippocrates. In what the eſſence of this principle conſiſts, is not known; but there muſt be an alteration in the chymical properties of the atmoſphere to ſolve the difficulties that attend our inquiries into the cauſe of peſtilence.—That this alteration is the effect of a poiſon, "e cœlo demiſſum," is an hypotheſis unſupported by facts and wholly incredible.

The third cauſe of peſtilence, mentioned by this author, is infection.

Diemerbroeck alſo maintains the diſtinction between *peſtis* and *peſtilentia*. The latter is ſuppoſed to proceed from foul exhalations, intemperate ſeaſons and the like. But the plague, he contends, cannot be occaſioned by thoſe cauſes, tho theſe may aid the ſeminarium or general cauſe.

Van Helmont, a Flemiſh writer of ſome celebrity, in the laſt century, maintains that the plague cannot be aſcribed to the "importunate and unſeaſonable changes of times, nor to putrefaction;" that the "poiſon of the plague is a far ſecret one from any other;" that the "matter of that diſeaſe is a wild ſpirit tinged with poiſon, exhaling from a diſeaſed perſon, or drawn inwards from a gas of the earth putrified by continuance, and receiving internally an appropriate ferment, and by degrees attaining a peſtilent poiſon in us." "The remote, crude and firſt occaſional matter of the peſtilence, is an air putrified thro' continuance, or rather a hoary putrified gas, which putrefaction of the air, hath not the 8200th part of its ſeminal body." This explanation ſeems to be hardly intelligible.

Works, Lond. Edit. 1662, p. 1085, 1090, 1102, 1125.

This author contends that "the peſt is not ſent down from heaven, but that popular plagues do draw their firſt occaſional matter from an earthquake, and from the conſequences of camps and ſieges."

p. 1125.

Hodges, who wrote a treatiſe on the great plague in London in 1665, obſerves that the air ſuffers ſome eſſential alteration which is neceſſary to favor the propagation of peſtilence. The nitro-aerial principle, which cauſes or invigorates vegetable and animal life, ſometimes becomes imperfect, degenerate or corrupt, being tainted with ſomething pernicious to vitality. He calls it poiſonous, and obſerves that it proves injurious to trees and cattle, as well as to man. He ſuppoſes the corrupting principle to be a ſubtle aura or vapor extricated from the bowels of the earth. To this cauſe alſo he aſcribes the death of fiſh during periods of peſtilence. At the ſame time he contends that the infecting principle is generated in Africa or Aſia, and conveyed to other countries. The ſeat of the diſeaſe he ſuppoſes to be in the animal ſpirits.

Van Swieten maintains that the cauſe of Epidemics is in the hidden qualities of the air, and inexplicable. He ſuppoſes it not impoſſible that exhalations in earthquakes may augment or leſſen the deleterious quality of the air in peſtilence.

Com. vol. 16, 47.

Sydenham not only agrees with Diemerbroeck, Van Swieten, and others, in aſcribing peſtilence to occult qualities in the air, but has entered into the ſubject of explaining the peculiar ſymptoms of diſeaſes by the influence of an Epidemic conſtitution of the air. His *occult qualities* have been ridiculed by later phyſicians, and ſo far as his theory, in this reſpect, has been neglected, the ſcience of medicin has degenerated. If I miſtake not, it can be made evident, that one of the moſt important, as well as moſt difficult branches of medical ſcience, is to aſcertain the effect of the reigning conſtitution of air, on prevailing diſeaſes, and to apply that knowledge to the cure of thoſe diſeaſes.

Dr. Mead's treatiſe on the plague has been much admired and celebrated; yet I will aſſert, that next to the "Traitè de la peſte," a treatiſe in quarto on the plague of Marſeilles, publiſhed by royal permiſſion, it is the weakeſt and leaſt valuable performance on that ſubject now extant. The author acknowledges he had never ſeen the diſeaſe of which he wrote; and therefore muſt have formed his opinions on the obſervations of others.

His eſſay is intended to demonſtrate that the plague is propagated by ſpecific contagion only, and he attempts to prove that this diſeaſe, like the ſmall-pox and meaſles, has been bred in Egypt or Ethiopia, and thence propagated and entailed on Europe.

Works, p. 242 & 3.

In ſupport of this theory he even goes ſo far as to call in queſtion the unanimous teſtimony of hiſtorians, who relate that the terrible plague of 1347, 8, 9, and 50, began in Cathay, China. In oppoſition to which he " queſtions not," that that peſtilence originated in Egypt. He alledges that we muſt ſeek the cauſe of plague in Egypt and *no where elſe.*

p. 246.

He aſcribes the plague to the putrefaction of animal ſubſtances and unſeaſonable moiſture, heats and want of winds; but ſays " no kind of putrefaction in European countries is ever heightened to a degree capable of producing the true plague."

p. 247 & 8.

This author aſſigns three cauſes of plague. 1ſt. Diſeaſed perſons: 2d. goods tranſported from infected places: 3d. a corrupted ſtate of air.

p. 250.

He thinks the cauſes mentioned ſo obvious that he wonders at authors who reſort to hidden qualities, ſuch as malignant influences of the heavens, arſenical, bituminous or other mineral effluvia, with the like imaginary or uncertain agents.

p. 249.

He does not however deny all latent diſorders in the air, but conſiders them as ſecondary cauſes only, increaſing and promoting the diſeaſe when once bred, but he thinks infection to be the means of its propagation. In this he differs widely from Diemerbroeck who utterly denies that the diſeaſe is originally derived from infection, although he agrees that it may be afterwards communicated from perſon to perſon by contact or near approach. Diemerbroeck alſo maintains the latent qualities of the air to be the *principal* cauſe of the plague; or cauſe *ſine qua non*—a point which the facts to be hereafter detailed will moſt clearly demonſtrate.

Dr. Mead ſays, " the plague is never originally bred with us, but is always brought accidentally from abroad."

p. 261.

The ſame opinion is aſſerted moſt poſitively in James' Medical Dictionary, and in moſt modern publications on the ſubject. The compilers of the Encyclopedia ſay, " the plague, as *is generally agreed*, is never bred or propagated in Britain, but always imported from abroad, eſpecially from the Levant, Leſſer Aſia or Egypt where it is very common." Such alſo was the opinion of the celebrated Cullen.

Encyclop. art. plague and medicine no. 221.

The following ſentence in Dr. Mead is very exceptionable, as it is calculated to check a ſpirit of free enquiry—a ſpirit to which mankind are greatly indebted for improvements in ſcience. " It may be juſtly cenſured in thoſe writers that they ſhould undertake to determine the ſpecific nature of theſe ſecret changes and alterations which we have no means at all of diſcovering," alluding to changes in the air.

p. 249.

In oppoſition to all theſe great authorities, it will probably be proved, that the plague generally, if not always originates, in the country where it exiſts as an epidemic. The common opinion of the propagation of peſtilence ſolely by infection, has had a moſt calamitous effect on medicin and on human happineſs. It has prevented the reſearches of acute modern philoſophers and phyſicians, who might have been able, by diligence and a comprehenſive view of the ſubject, to trace peſtilence to its real cauſes, and to ſuggeſt the true means of avoiding this terrible ſcourge.

Thompſon who travelled in Egypt about the year 1734, and whoſe account of that country has not been mended by modern travellers, obſerves, " The coming and going of the plague are two things not eaſily to be accounted for, notwithſtanding we are aſſured of the facts in a moſt unqueſtionable manner. That the infection is propagated in the air, and thereby transferred from place to place, ſeems to be a matter out of diſpute; but how it is generated therein, we are much at a loſs to determine." He proceeds to ſtate, like many others, "that the plague is generally brought into Egypt from Conſtantinople or by Caravans from the ſouthern countries." And on the whole he thinks it rarely generated in that country.

Travels, vol. 2, p. 194 & 5.

In the Monthly Review vol. 33, there is an account of the plague in Conſtantinople, by Dr. Mackenzie, in which are ſome paſſages worthy of notice. After aſſerting his opinion that this diſtemper can be communicated only by the touch or near approach, he adds, "that both here and at Smyrna, the plague breaks out, in ſome years, when it is not poſſible to trace whence it is conveyed." He ſuppoſes the diſeaſe to proceed from "venomous moleculæ lodged in wool, cotton, hair, leather and ſkins," in houſes not well cleanſed after peſtilence; but that the plague from this ſource is not ſo fatal as when it comes from abroad. The air he thinks no otherwiſe concerned in producing the diſeaſe, than as "a vehicle to convey the venomous particles from one body to another."

Dr. Chandler, in his account of a plague in Smyrna, has nearly the ſame idea, as Mackenzie, with reſpect to the origin of the diſeaſe. He ſays "the plague might perhaps be truly defined, a diſeaſe ariſing from certain animalculæ, probably inviſible, which burrow and form their nidus in the human body. Theſe whether generated in Egypt or elſewhere, ſubſiſt always in ſome places ſuited to their nature. *They are imported almoſt annually into Smyrna*, and this ſpecies is commonly deſtroyed by intenſe heat. They are leaſt fatal at the beginning and latter end of the ſeaſon. If they arrive early in the ſpring, they are weak; but gather ſtrength, multiply and then periſh. The pores of the ſkin, opened by the weather, readily admit them."

Baron de Tott in his memoirs obſerves "The reſearches I have carefully made concerning the plague, which I once believed to originate in Egypt, have convinced me, that it would not be ſo much as known there, were not the ſeeds of it conveyed thither by the commercial intercourſe between Conſtantinople and Alexandria. It is in this laſt city that it always begins to appear. It rarely reaches Cairo, though no precaution is taken to prevent it; and when it does, it is preſently extirpated by the heats, and prevented from arriving as far as the Said. It is likewiſe well known that the penetrating dews, which fall in Egypt about midſummer, deſtroy, even in Alexandria, all remains of this diſtemper."

Vol. 4. page 70.

In vol. 1, p. 38 he ſays, " that the reſearches into the nature of this diſtemper have only produced opinions which are ſelf-contradictory or unſupported by facts."—" There is no difficulty with reſpect to the cauſes which preſerve and propagate it. Both the one and the other may be referred to the *dealers in old clothes* in Conſtantinople."

Du Pauw, in his Philoſophical Diſſertations on the Egyptians and Chineſe, ſpeaks of the plague as a diſeaſe of Egypt; and ſuppoſes the plague at Vienna in 1680, to have been imported from that country.—" Egypt is the hot-bed of the plague—this diſorder is not produced by famin—by exact annotations continued during twenty-eight years, we find that it raged five times, without being preceded by any ſcarcity of food, and contrary to what I once ſuſpected, unreſtricted to a periodical courſe."

Vol. 1. p. 87, 89.

Savary alledges, in oppoſition to the laſt mentioned author, that the peſtilence is *not* native in Egypt, and that he conſulted Egyptians and phyſicians who had lived there 20 years, who *informed* him that the plague was brought thither by the Turks. He ſuppoſes Conſtantinople to be now the reſidence of this dreadful affliction, which is preſerved in exiſtence by means of old clothes, which, after a plague has ceaſed, are diſtributed and ſold very low by the Jews, and thus the diſeaſe is propagated.

Dr. Alexander Ruſſel has given an account of the plague in Aleppo in 1742 and 3, and endeavored to aſcertain from what quarter the diſeaſe originated and invaded that city. He ſeems to think, it always appears firſt at Tripoli, Sidon, or on the Sea Coaſt. It was aſſerted that the great plague of 1719 came from the northward; but as this fact does not ſuit his theory, he, like

Dr. Mead, in the caſe before mentioned, gives no credit to the aſſertion, but adheres to his opinion that all plagues originate in Egypt.—At the ſame time he is puzzled to trace the diſeaſe, in any inſtance, to that country.

See his hiſt. of Aleppo.

Dr. Patrick Ruſſel has publiſhed a quarto volume on the plague of Aleppo in 1760, and the ſubject of quarantine. In this work, he has preſerved a number of important facts, but without underſtanding the ſubject ſufficiently to apply them to uſeful purpoſes. All his theory and practical remarks are founded on the vulgar ſuppoſition of the origin of that diſeaſe in one or two cities only, and its propagation by ſpecific contagion—a ſuppoſition totally unfounded; his treatiſe of courſe will be found of little value, in this reſpect.

Mr. Volney, with all his philoſophy and ſeveral months reſidence in Egypt, furniſhes no additional light, on the ſubject of the origin of peſtilence. He ſays, " ſome perſons have attempted to eſtabliſh an opinion, that the plague originates in Egypt; but this ſuppoſition, *founded on vague prejudices*, ſeems to be diſproved by facts." This is an extraordinary aſſertion for a man who has the character of a philoſopher. And on what authority does it reſt? Simply on the declaration of European Merchants who have been ſettled for many years at Alexandria, and of the Egyptians, who ſay that the diſeaſe firſt appears in Alexandria, and that it is invariably preceded by an arrival from Smyrna or Conſtantinople. Therefore this philoſopher concludes, " that the diſeaſe certainly originates from Conſtantinople, where it is perpetuated by the abſurd negligence of the Turks, who publicly ſell the effects of perſons who die of that diſtemper." Here we have another great man aſcribing this vaſt effect, an epidemic peſtilence, to ſo trifling a cauſe, as infection preſerved in furs, woolens, and old clothes!

What is ſtill more aſtoniſhing, the ſame author adopts the ideas of the Egyptians, which Proſper Alpinus had adopted before him and which he has evidently copied from Alpinus, that a plague coming from one country is leſs malignant than when it comes from another, as tho there could be a difference in the *ſpecific* contagion of the diſeaſe, when produced in different counties. Volney ſays " when brought from the Archipelago, or even from Damietta, into the harbours of Latakia, Saide or Acre, it *will not ſpread ;* it rather chuſes preliminary circumſtances, and a more complex route ; but when it paſſes directly from Cairo to Damaſcus, all Syria is ſure to be infected."

Travels in Egypt and Syria vol. 1. 253. et ſeq.

It is really ſurpriſing that, if the fact is well evidenced, that a plague proceeding from one country is more malignant than one proceeding from another, men of extenſive erudition and obſervation ſhould not undertake to aſſign ſome rational cauſe for the phenomenon, rather than to propagate the vulgar tales and opinions of the Egyptians.

From this lengthy ſtatement of opinions in regard to the origin and cauſes of peſtilence ; opinions weak, contradictory, abſurd or inaccurate, what concluſion ſhall be drawn. This, moſt evidently, that the *ſubject is not underſtood.* Perhaps it never will be underſtood. But ſurely a ſubject ſo intereſting to the life and happineſs of man, deſerves moſt critical and laborious enquiry. A ſubject which concerns the lives of millions of the human race ought not to be abandoned by the man of ſcience, until every effort to find the truth ſhall have been exhauſted. Yet ſtrange as it may appear, even a hiſtory of peſtilence that all devouring ſcourge which has ſwept away a large portion of the human race in every age, is yet a deſideratum in our libraries.

To ſupply in part this defect, and to ſtimulate further reſearches into the origin of this frequent and formidable calamity, I will recite ſuch hiſtorical accounts of the plague, as an imperfect examination of authors has enabled me to collect. And as the moſt accurate obſervers of the operations of nature, have ſuggeſted the probability that peſtilential epidemics are cauſed by ſome occult qualities in the air, or by vapor from the internal parts of the earth, or by planetary influence, it is abſolutely neceſſary to enquire how far ſuch ſuggeſtions are ſupported by facts. For this purpoſe, I ſhall note, as I proceed, any extraordinary occurrence or phenomena in the phyſical world, as earthquakes, eruptions of volcanoes, appearance of comets, violent tempeſts, unuſual ſeaſons, and other ſingular events and circumſtances, which may appear to be connected with peſtilence, either as cauſe or effect, or as the effect of a common cauſe.

The reſult of this proceſs will probably be a refutation of ſome of the foregoing opinions, and the eſtabliſhment of ſuch as are more rational and philoſophical.

It is proper however to premiſe, that this inveſtigation, which has been purſued but a few months only, amidſt other occupations, has been ſubjected to inconveniences peculiar to the United States. No man can find in this country *all* the books neceſſary for a complete examination of a hiſtorical or ſcientific ſubject. The public libraries in New-York and New-Haven, tho very valuable, are deficient. Thoſe of Harvard College and Philadelphia, are more extenſive, but incomplete. I have examined them all, tho in ſome of them I could ſpend but little time; yet in none of them could I find all the authorities which it was my wiſh and intention to conſult.

It is further to be premiſed, that I have, as far as it could be done, reſorted to original hiſtorians for my facts and authorities. This is certainly the only ſafe method for a compiler; but in the United States, it cannot be purſued with complete ſucceſs, for want of the original writers of the local hiſtories of countries. Moſt of the Greek and Roman authors are to be obtained in our public or private libraries; but ſome of the beſt hiſtorians of Italy, Germany, the Baltic nations and Spain, who have lived within the laſt four or five centuries, are not to be found; others are in the original languages, which I do not underſtand.

As to the modern hiſtorical compilations in my native language, they are almoſt uſeleſs on this ſubject. The moſt able and celebrated of them, Hume, Robertſon, Smollet, Rapin and Gibbon, have paſſed over moſt of the plagues which have deſolated cities and countries, without notice, or with ſome general remarks which afford little light on the ſubject of their origin.

Moſt modern writers appear to think every thing beneath their notice, except war and political intrigues. They detail, with diſguſting minuteneſs, whatever relates to the deſtruction or annoyance of mankind by the ambition of princes and demagogues;

while they omit or ſlightly mention whatever regards the civil and domeſtic economy, the private manners and habits, the arts, the health, and the ſocial happineſs of nations. To this deſcription, Dr. Henry's Hiſtory of England, is an exception.

Nor have modern travellers furniſhed us with many valuable materials to ſupply the defects of our hiſtories. They paſs from country to country; examin and deſcribe a few external objects, ſuch as cities, buildings, paintings and ſtatues, but leave more uſeful ſubjects unexamined, and return home with a book of vulgar tales and errors.

In reſpect to uſeful hiſtory, the ancient authors have the preference over the modern. Modern compilers appear to have written for fame or for money, rather than for the ſake of unfolding and diffuſing truth. Hence they have principally attended to thoſe animated periods of the world, which were diſtinguiſhed for great achievments; or thoſe prominent events, a deſcription of which would intereſt the paſſions of their readers: Or they have ſelected for deſcription ſuch parts of the hiſtory of nations as would enable them to adorn their works with an elevated ſtyle; omitting a multitude of ſubordinate facts, as below the dignity of hiſtory. Others appear to have undertaken hiſtorical compilation, ſolely or principally to ſupport ſome preconceived ſyſtem of government or religion; and have ſtudied to bend the evidence of facts, to the accompliſhment of that purpoſe.

Theſe obſervations have ariſen out of my enquiries, relative to peſtilential diſeaſes. I have diſcovered that many of the hiſtories or rather abridgements and compilations which are almoſt the only authorities conſulted by American readers in general, are very incomplete; and no man who relies on them only, and neglects original writers, can acquire an accurate and comprehenſive knowledge of hiſtory.

SECTION II.

Hiſtorical view of peſtilential epidemics, and the phenomena in the phyſical world, which precede, attend or follow them, from the earlieſt accounts, to the Chriſtian era.

IT is an agreed point that the five books of Moſes are the moſt ancient authentic hiſtory now extant. In the very threſhhold of this genuine hiſtory, we meet with accounts of the plague in Egypt. In the fifth chapter of Exodus, the peſtilence is mentioned as a formidable calamity.

It is remarkable, that throughout the hiſtory of the Jews, and in the prophets, *peſtilence, famin* and *the ſword* are often mentioned in connection with each other, and deſcribed as the moſt dreadful calamities that can befal mankind. It will probably appear that famin and peſtilential diſeaſes do at times reciprocally produce each other, and that war not unfrequently occaſions both. But there is ground to believe that famin and peſtilence are uſually the effects of one common cauſe. In the Bible, as in other ancient writings, no diſtinction is made between general peſtilence which ſpreads over whole countries, and thoſe autumnal epidemics, which are evidently produced by powerful local cauſes. There are however many paſſages in ſcripture that corroborate the principles reſpecting peſtilence, which are ſtill obſerved, and which doubtleſs depend on eſtabliſhed laws of nature.

When David was ſummoned to receive his puniſhment for numbering the children of Iſrael, he was permitted to elect one of the three calamities, famin, the ſword or peſtilence. For a pious reaſon, he preferred peſtilence, and ſeventy thouſand of his ſubjects periſhed.

2 Sam. xxiv.

The prophets Jeremiah and Ezekiel, in their denunciations, ſpeak often of theſe three judgments, and in a way that authorizes the opinion, that they conſidered them all to be cloſely connected. It is however remarkable that peſtilence is every where mentioned as the peculiar ſcourge of *cities*.

In the 21ſt chapter of Jeremiah, the ſiege of Jeruſalem is foretold. " I will ſmite the inhabitants of this *city*, both man and beaſt ; they ſhall die with a great peſtilence. He that abideth in this *city*, ſhall die by the ſword, by the famin and by the peſtilence ; but he that goeth out, and falleth to the Chaldeans that beſiege you, *he ſhall live*, and his life ſhall be to him for a prey."

Ezekiel v. 12. declares that a *third part* of the inhabitants of Jeruſalem ſhall die by peſtilence. This is a proportion which is not uncommon, in violent plagues. In the ſeventh chapter, the ſame prophet ſays, " The ſword is *without*, and the peſtilence and famin *within* ; he that is in the field, ſhall die with the ſword ; and he that is in the *city*, famin and peſtilence ſhall devour him."

Another paſſage in the ſame prophet deſerves notice. Chap. xxxiii, it is ſaid, " Thus ſaith the Lord, as I live, ſurely they that are in the waſtes ſhall fall by the ſword, and him that is in the open field will I give to the beaſts to be devoured, and they that be in the *forts* and the *caves* ſhall die of the peſtilence."

In theſe paſſages, we have proof that in the time of theſe prophets, it was conſidered as a well known fact, that peſtilential diſeaſes are the effect of crouded propulation, raging peculiarly in *cities*, *forts* and other confined places. No evidence appears, in theſe early records, that the ancients, who lived in countries ſubject to plague, and near to Egypt, had any idea of the conveyance of the diſtemper from place to place by infection. It was conſidered as a judgment of heaven ; and piety ſtill recognizes this idea ; to which, in a moral and religious view, there can be no objection. But philoſophy endeavors to trace the hand of heaven through the medium of ſecond cauſes ; and the facts recorded of peſtilence in ſcripture, lend their aid to accompliſh the object.

In 1 Samuel v. and vi. we have an account of the peſtilence among the Philiſtines, inflicted on them as a puniſhment for taking the ark from the Jews, in which fifty thouſand of the inhabitants of Beth-ſhemeſh periſhed. This plague is called *emerods* and a *deadly deſtruction.* This paſſage is noted on account of the ſpecification of the time of the year, when the diſeaſe prevailed. It is ſaid, the ark was in the country of the Philiſtines *ſeven months*, and was returned, during wheat-harveſt, ſoon after which it is underſtood, the plague ceaſed. Now wheat harveſt, in Syria, is in May ; and it may be ſuppoſed, the peſtilence was moſt violent in the period next preceding that time, viz. April, or during the month of May, for it was the ſeverity of the diſeaſe which induced them to ſend back the ark.—This account correſponds with the modern courſe of peſtilence in that country. It appears in February or March, increaſes till May or June, then gradually diſappears.

See A. Ruſſel. Hiſt. of Aleppo. P. Ruſſel on the plague at Aleppo.

In this caſe, modern facts confirm the accuracy of the ſcripture-hiſtory ; at the ſame time, they eſtabliſh the identity of the diſeaſe with modern plague, and the uniformity in the operations of the laws of nature. They prove further that the climate of that country has ſuffered no material alteration.

In the eleventh chapter of Numbers, we have an account of a plague among the Iſraelites, occaſioned by their eating great quantities of the fleſh of quails, after being ſome time deſtitute of animal food—an obvious effect in the hot climates of Egypt and Arabia.

The ſcripture-hiſtory alſo furniſhes us with ample proof that Egypt was, in early times, the nurſery of plague—known and conſidered as ſuch, centuries before the foundation of Smyrna, Conſtantinople, or other large cities in Greece or Aſia Minor.

In Deuteronomy xxviii. the Iſraelites are warned againſt diſobedience to the laws of Moſes, and in caſe of diſregarding them, are threatened with the *diſeaſes of Egypt*, the botch, the emerods and the ſcab. Theſe are ſtill prevailing diſorders in that country under the names of leproſy, elephantiaſis, plague, &c. In verſe 60 of the ſame chapter, it is denounced, "Moreover he ſhall bring upon thee *all the diſeaſes of Egypt*, of which thou waſt afraid."

Amos iv. 10. "I have ſent among you the *peſtilence*, after *the manner of Egypt*."

Theſe authorities of high antiquity leave no room for doubt or controverſy, on the queſtion, whether Egypt originates the plague. The evidence is deciſive againſt thoſe modern ſuperficial philoſophers, who hold in contempt the moſt authentic ancient hiſtory, becauſe it has claims to inſpiration. Yet infidels, if they were not too wiſe to read, examin and be informed, might be convinced of the authenticity of the ſcripture hiſtory, by comparing the facts related, with the preſent ſtate of the world. The preſent endemical and other diſeaſes which often occur in Egypt, anſwer ſo exactly to the deſcription given of them in the books of Moſes, as to leave no room to queſtion the genuineneſs of thoſe books. It was the peculiar climate of Egypt, and the uſual prevalence of ſcorbutic and malignant complaints, in that country, which occaſioned all the minute injunctions of Moſes, in regard to waſhing, cleanſing and purifications. The ſame or ſimilar regulations were enjoined by the laws of Egypt.*

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* It has been controverted whether Moſes borrowed his ſyſtem of purification from the inſtitutions which he found in Egypt; or whether the Egyptians borrowed the idea from the laws of Moſes. Nothing can be more idle than ſuch a diſpute. The experience of men would very readily ſuggeſt the neceſſity and utility of great cleanlineſs, to preſerve health in the climate of Egypt. The cuſtom of circumciſion was eſtabliſhed among the Egyptians, as well as among the Iſraelites; and Herodotus who viſited Egypt to collect facts, expreſsly declares that the "Egyptians circumciſed their children for the ſake of cleanlineſs."—There is not the leaſt reaſon to ſuppoſe that the Egyptians borrowed this cuſtom, or others reſpecting cleanlineſs, from the Iſraelites. Nor does it vary the queſtion, that the laws of Moſes were the commands of God. Divine commands have rarely introduced a new principle of right and wrong. Moſt of them are injunctions on man to conform to principles of moral fitneſs or utility, which exiſted *anterior to the commands*. They *unfold* to human view, and *enforce* the practice of thoſe principles; but do not *create* them. They add the ſtrong authority of *poſitive*, to the feebler authority of *implied* divine will; and are thus of the higheſt importance to mankind.

In the Bible alſo we find evidence of the prevalence of peſtilent epidemics among cattle. A murrain is among the ten plagues mentioned in Exodus, and Ezekiel xiv. 21 ſays, " If I ſend a peſtilence into that land, to cut off from it *man* and *beaſt.*"

We find the ſame fact in Homer; where alſo we obſerve peſtilence aſcribed to extreme heat, under the allegorical name of Apollo, or the ſuppoſed influence of the dog-ſtar.

" On mules and dogs, the infection firſt began,
And laſt the vengeful arrows fixed in man."

" But let ſome prophet, or ſome ſacred ſage,
Explore the cauſe of great Apollo's rage."

" If broken vows this heavy curſe have laid,
Let altars ſmoke, and hecatombs be paid;
So heaven atoned ſhall dying Greece reſtore,
And Phœbus dart his burning ſhafts no more."

Pope's Verſion. Iliad 1. 69, 83, 87.

In the following paſſage, peſtilence is aſcribed to heat and ſouth winds, according to the opinion of Hippocrates.

As vapors blown by Auſter's ſultry breath,
Pregnant with plagues, and ſhedding ſeeds of death;
Beneath the rage of burning Syrius riſe—

Book 5. 1058.

" Like the red Star, that from his flaming hair,
Shakes down diſeaſes, peſtilence and war."

Book 19. 412.[*]

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[*] This evidently alludes to the received opinion among the ancients, that comets have an influence in producing peſtilence. In the courſe of this work, we ſhall have ſome grounds to determin which is moſt correct, this opinion of antiquity, or that of the moderns who hold it in contempt.

It is to be obſerved that the idea of comets producing diſeaſes, is not in Homer, in the paſſage from which theſe lines are taken, but is a licence of the tranſlator, Mr. Pope, and the ſenſe and almoſt the words, are borrowed from Milton. Book 2. l. 710.

" ——— And like a comet burn'd
In th' arctic ſky, and from his horrid hair,
Shakes peſtilence and war."

"Not half ſo dreadful riſes to the ſight,
Through the thick gloom of ſome tempeſtuous night,
Orion's dog (the year when autumn ſways)
And o'er the feebler ſtars exerts his rays:
Terrific glory! for his burning breath,
Taints the red air, with fevers, plagues and death."

Book 22. 37.

The circumſtances to be noted in the foregoing extracts, are, firſt that the peſtilence among cattle *preceded* that among men. This is a common fact, but not always the caſe. Secondly, that heat and moiſture, with a ſouth wind were productive of peſtilential diſeaſes. Thirdly, that ſuch diſeaſes raged in Greece during the autumnal ſeaſon, and were aſcribed to the influence of Syrius, or the dog-ſtar.

We read of a terrible peſtilence in the iſland of Ægina, to the ſouthward of Athens, in the reign of Æacus, grandfather of Achilles, about ſixty years before the Trojan war; a plague which depopulated the iſland. Of this calamity, Ovid has given a moſt affecting account Metam. lib. 7. 523. He repreſents the earth as covered with clouds, darkneſs and ſuffocating heat; the ſouth wind blowing for four months, the lakes and fountains being infected, and the earth overſpread with poiſonous ſerpents. The diſeaſe firſt invaded dogs, birds, ſheep and oxen; then mankind. Death was ſudden; and the ſtreets loaded with dead carcaſes. The ſymptoms began with heat in the bowels, fluſhings of the face, difficulty of breathing, &c. How far the poet was authorized by hiſtory in this deſcription, I do not know; but the whole paſſage is worth the attention of the learned reader.

It is certain however that the ancients believed comets to be the cauſe of peſtilential diſeaſes.

It is further remarkable that, in the peſtilential period to which Homer here alludes, which happened during the ſiege of Troy, Etna was in a ſtate of eruption; or rather at the cloſe of the period: For Eneas, when driven from Troy, ſailed with his fellow citizens to Sicily, but was frightened away by a violent exploſion of Etna. See a forcible deſcription of this eruption in Virgil lib. 3.

Dyoniſius Hallicarnaſſus informs us that the Pelaſgi, who ſettled in Sicily, ſoon after the Trojan war, were affected with peſtilence. Book 1.

Our next accounts of the plague are in the hiſtories of Rome; for altho Greece contained the older ſtates, and had large cities, before the foundation of Rome; yet the moſt populous parts of Greece, Attica and Lacedemon, are dry, rocky countries; not calculated to generate peſtilence nor to favor its propagation.

Rome, on the other hand, is ſituated in a level country, on the banks of a river, and not far from extenſive marſhes. Under the influence of powerful local cauſes, this city felt every derangement of the atmoſphere, by intemperate ſeaſons, or other cauſes.

The firſt plague in Rome happened about the 16th year from its foundation, ſoon after the murder of Tatius, and in time of peace. " It killed inſtantly without any previous ſickneſs. Even trees and cattle were not exempt from the malignity of its influence; but all nature lay one deſolate and abandoned waſte. It was even ſaid to rain blood." This was 738 years before the Chriſtian era.

Plutarch's life of Romulus.

Zonaras ſays that Rome was laid waſte by diſeaſe, and the earth and cattle were barren. " Sterilitas agrorum et pecudum."

Lib. 7.

This peſtilence muſt have been of the moſt malignant kind, and by the effect on cattle and trees, it was obviouſly during a peſtilential ſtate of the atmoſphere, when there was a defect in the powers of vegetable as well as animal life—many ſimilar inſtances will occur in the courſe of this hiſtory. It is to be remarked that Rome was then in its infant ſtate, containing few people, and few of the artificial cauſes of diſeaſe. Of courſe the ſickneſs muſt have been cauſed by general contagion, or that ſtate of air which is unfavorable to the preſervation of healthy life.

In the reign of Numa Pompilius A. R. 46, Italy was afflicted with ſevere peſtilence; on which occaſion Numa inſtituted the Salii, twelve dancers who had the care of the brazen target, which was ſuppoſed to deſcend from heaven into the hands of

Numa, and to check the peſtilence. See the inſtitution and annual ceremonies of the Salii, deſcribed in

Plutarch's life of Numa, and
Kennet's Antiquities, part. 2. b. 2.

Another plague attacked Rome in the reign of Tullius Hoſtilius, about the year 110 or 112, and B. C. about 640. No important particulars are related, except that the ſickneſs relaxed the martial ſpirit of the citizens. To prevent this effect, that warlike prince gave the ſoldiers no reſt, judging "ſalubriora militiæ, quam domi, juvenum corpora eſſe," that the young men would be more healthy in the army abroad, than at home.

Livy b. 1. 32.

In this opinion, the King of Rome was probably well founded; for it appears from facts hereafter to be related, that Rome was moſt ſubject to peſtilence in time of peace, when the ſoldiers were at Rome, augmenting the population of the city, and indulging in eaſe and luxury.

In the reign of Tarquin, the laſt King of Rome, about the year 240 and B. C. 514 a violent plague infeſted the city. Zoſimus however places this event, after the expulſion of Tarquin.

Hook, vol. 1. 109. Zoſimus lib. 2.

In the year of Rome 261, there was a famin and peſtilence in the city, and the plague depopulated Velitræ, a city of the Volſci, who applied to the Romans for inhabitants to re-people the place.

Muratori. Tom. 1. 5. Hook, vol. 1. 196. Functius Chronol.

Soon after this, we read of a contagious diſtemper among cattle, but not very fatal.

Dion. Hal. lib. 7.

In the year of Rome 281 and B. C. 473, a plague raged in the city and country, but was moſt fatal in the city, ſparing no age nor ſex, and yielding to no remedies. It came ſuddenly and ſuddenly diſappeared.[*]

Dion. Hal. lib. 1.

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[*] This account ſeems to contradict the doctrin of a *progreſſion* in the peſtilential principle. Thucydides remarks alſo that the plague invaded Athens ſuddenly. Such is the effect of ſuperficial obſervation. So in 1794, the people of New-York alledged the city to be very healthy; when in fact the bill of mortality was higher by one fourth than

There was an eruption of Etna, according to common chronology, in the year of Rome 277, and B. C. 477. This circumſtance is ſtrong evidence that the chronology is not quite correct. The eruption took place unqueſtionably during the peſtilential period, to which this plague in Rome belonged. It might not have been the very year of the plague in Rome, but probably was not ſo diſtant as four years. To which event, the plague or the eruption, a wrong era is aſſigned, I ſhall not determin. The early hiſtory of Rome, from the deſtruction of the ancient records, by the burning of the city, when taken by the Gauls under Brennus, in the year 365, is ſubject to great uncertainty, and authors do not agree on the chronology of that part of the Roman ſtory.

☞ Since writing the foregoing remarks, I have diſcovered a fact which may ſerve to aid us in fixing the period of the events abovementioned. In the courſe of this work it will be proved beyond doubt, that the approach of comets to our ſyſtem, has a prodigious influence on the elements of this globe. At preſent I ſhall aſſume the fact, that the eruption of Etna abovementioned, was nearly cotemporary with the appearance of a comet, during this period of peſtilence. In looking into Pliny's Natural Hiſtory, lib. 2. ca. 25, I find that a comet was viſible, at the time of the battle of Salamis. Speaking of the different ſpecies of comets he ſays "Ceratias Cornus ſpeciem habet, qualis fecit cum Græcia apud Salamina depugnavit." "A comet in the figure of a javelin, like that which appeared when Greece fought at Salamis." This battle is fixed by authors in the year B. C. 480, and conſequently in the year of Rome, by common chronology 274. It appears to be a general law of nature that the approach of comets to this earth, calls into action the ſubterranean fire, and volcanoes diſcharge their contents, during or within a few months of the appearance of comets. We may ſafely conclude therefore that the eruption was within a year

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uſual. So the invaſion of New-London by the fever in 1798 appeared to be *ſudden*; altho in fact the bills of mortality ſhow a moſt ſenſible increaſe in the force of the deſtructive principle, two years previous to the attack.

or two of the battle of Salamis. This is not certain, but probable; and I am inclined therefore to believe that Hook and others have placed the plague in Rome three or four years too late, or that the eruption is placed too early.†

The army of Xerxes, retreating into Aſia, after the loſs of the engagement near Salamis, ſuffered extremely by peſtilential diſeaſes. And it will hereafter appear that during periods when the peſtilential ſtate of air is evidenced by the exiſtence of plague in *cities*, armies in the field and ſeamen on the ocean are much more ſubject to epidemic complaints, than at other times.

The land forces which Xerxes left behind him under Mardonius, fell a prey to famin and peſtilence. The highways were ſtrewed with dead bodies, and wild fowls and beaſts devoured them.

The ſame period was diſtinguiſhed by tempeſts and inundations—the conſtant attendants on comets. A violent ſtorm had deſtroyed the famous bridge built by the great monarch over the Helleſpont, before he returned from Greece; and while the troops under Mardonius were beſieging Potidea, an inundation of the ſea broke into their trenches, drowned ſome ſoldiers, and compelled them to raiſe the ſiege.

Herodotus lib. 8. 115, 129. Juſtin lib. 2. cap. 13.

Theſe great phenomena, without any hiſtorical account, would make it nearly certain that a comet appeared at that time, and the peſtilence undoubtedly happened within a ſhort period of its approach.

A more terrible peſtilence invaded the Roman city and territory, in the year 290, and B. C. 464. Several facts in regard to it, deſerve particular notice. "Grave tempus et forte annus peſtilens erat urbi, agriſque, nec hominibus magis, quam pecori; et auxere vim morbi, tenore pupulationis, pecoribus agreſtibuſque, in urbem acceptis. Ea colluvio mixtorum omnis generis animantium, et odore inſolito urbanos, et agreſtem confertum in arcta tecta, æſtu ac vigiliis angebat, miniſteriaque in vicem ac contagio ipſa vulgabant morbos."

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† Brydone mentions an eruption in the 77th Olympiad, comprehending the years of Rome from 282 to 285 incluſive, which is doubtleſs the ſame abovementioned.

Livy. lib. 3. 6. Dion Hal. lib. 10.

"This was an unhealthy time and a peſtilent year in town and country, affecting equally men and cattle; and the diſeaſe was augmented by crouds of countrymen and herds of cattle, which were received within the walls of the city, for fear of being plundered or deſtroyed [by the Latins and Hernici, who then ravaged the country.] That collection of all kinds of animals in the city, and the unuſual ſtench occaſioned by them, ſeverely affected both the citizens and the country people, crouded into cloſe buildings, depreſſed by heat and watching; and their fatigue and the contagion ſpread the ſickneſs into every quarter."

This is Livy's repreſentation. Dionyſius Hallicarnaſſus mentions that the diſeaſe ſeized *ſtuds* of mares, *herds* of oxen, and *flocks* of goats and ſheep; by which expreſſions we are perhaps to underſtand, that the diſtemper either did not ſeize thoſe animals, except in collections, or was remarkably fatal to them in numerous bodies—an idea warranted by modern facts. It is generally true of cattle as of men, that peſtilential diſeaſes are moſt deſtructive, where many are collected together; not only by reaſon of infection from the diſeaſed, but by the diminution of the vital principle of the air by reſpiration and perſpiration.

Oroſius lib. 2. 12. adds other circumſtances. He ſays there was a ſhort ſuſpenſion of war, when a grievous peſtilence, which never failed to compel the Romans to a truce, or to interrupt it, if made, raged violently through all the city. Many of the patricians were victims, but it was moſt fatal to the poor.

It is ſtated that this peſtilence began about the calends of September and raged in city and country. By country, *agris*, the Roman writers meant the ancient Latium, the modern Compagna di Roma, which was naturally unhealthy; tho, in the flouriſhing ages of Rome, extremely populous.

That the Roman territory ſhould be ſubject to autumnal complaints, is not at all ſurpriſing. At the port of the Tyber there were unwholeſome marſhes, called by Tacitus, Annals 15. 43. "Oſtienſes paludes." The ſhore to the ſouthward, bordering Campania, is called by the ſame hiſtorian, "ſqualente littore." To the ſouthward of Campania were and ſtill are the extenſive marſhes, called "paludes pomptinæ," which are ſo noxious as to create diſeaſe in a ſingle night, and which have cauſed the Appian way in modern times to be neglected, and the road to Naples to be carried round the marſhes on the eaſt.*

The territory next to the city of Rome is deſcribed by Livy, b. 7. 38. in theſe words "in peſtilente atque arido circa urbem ſolo"—a dry plain, but indented with lakes, bordered with marſhes, and ſubject to be overflowed by every uncommon riſe of the Tyber, or by ſtreams from the diſtant hills. Many epidemic diſeaſes have been diſtinctly traced to ſtagnant waters on this plain, after an inundation.

Avernus, a lake of Campania, near Baiæ, emitted ſuch a poiſonous vapor, that no birds would frequent its banks, and the ancients, in their flights of fancy called it, the road to Hell.

It was this ſituation of Rome which gave riſe to the Cloacæ, immenſe ſewers or drains, which penetrated the city and neighborhood—Vaſt works intended to drain off the ſtagnant waters; and while theſe were preſerved in good repair, the city was obviouſly more healthy.

This plague in the year 290 proved fatal to both of the Conſuls Servilius and Æbutius, to many illuſtrious Romans, and to a countleſs number of the Plebeians. The Senate and people, in deſpair had recourſe to prayers and ſupplications, the temples were filled with men, women and children, aſking forgiveneſs and favor of heaven.

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* In the epitome of the 46th book of Livy, which book is among thoſe which are loſt, I find it related that the Pontine Marſhes were drained or dyked [ſiccatæ] and converted into cultivable land, by the Conſul Cornelius Cethegus, about the year of Rome 572. The Romans were convinced that the marſhes were very unwholeſome, and they took incredible pains to render their city and territory healthful, by draining off all ſtagnant waters.

It is much to be regretted that we have not this book of Livy, to give us further information in what manner the draining of the marſhes was effected. It is conſidered by the moderns as impracticable.

The opinion of the ancients as to the unhealthfulneſs of Rome may be underſtood from the following Tetraſtichon, which is preſerved by Baronius.

"Roma vorax hominum, domat ardua colla virorum;
Roma ferax febrium, necis eſt uberrima frugum;
Romanæ febres ſtabili ſunt jure fideles;
Quem ſemel invadunt, vix a viventi recedent."

The brief tranſlation of which is "Rome ſubdues men by the ſword, and kills them with fevers."

Horace book 2. ode 29. gives to the Tyber, the epithet *udus*, wet or marſhy.

This violent plague was followed, anno Urb. Con. 292 by a violent earthquake. "Terra ingenti concuſſa motu eſt," ſays Livy, lib. 3. ca. 10. He expreſsly mentions this to have been in the conſulate of P. Volumnius and Serv. Sulpicius, which was the ſecond Conſulate after the peſtilence. An eruption of Etna is mentioned in the tables under the year of Rome 288, two years before the peſtilence and four years before the earthquake. But there is probably a ſmall variation in the chronology. The earthquake was probably at the time of the eruption, eſpecially as Livy mentions, that in the ſame year, "Cœlum ardere viſum," the heavens appeared to be in a flame.

Functius places theſe events one year later.

By this earthquake Locris, on the gulf of Corinth, was rent from the main land and turned into an iſland. Afterwards Locris was deſtroyed by another earthquake.

Severe drouth marked this period.

In the year of Rome 300 according to Livy and the common chronology and B. C. 454, another terrible peſtilence invaded Rome. The country was deſolated, and the citizens were exhauſted with continual burials. "Urbs aſſiduis exhauſta funeribus." Famin accompanied this calamity, and cattle were victims, as well as men. This plague took place in time of peace —"ab hoſte otium fuit," and in the abſence of the ambaſſadors who were ſent to Athens to collect the laws of Solon and the Grecian inſtitutions.

Livy b. 3. 32.

With this period correſponds an eruption of Etna, which authors place in the year of Rome 304; of courſe, it was at the cloſe of the peſtilential period.

In the year 315 of Rome and B. C. 439, according to Paulus-Diaconus, tremendous earthquakes ſhook Italy at intervals for a whole year, ſo that "aſſiduis Roma, nuntiis fatagareter," Rome was fatigued with meſſengers who were continually arriving with news of towns and villages demoliſhed.

The chronology of P. Diaconus rarely agrees with that commonly received. The earthquakes here mentioned probably uſhered in the long and formidable calamity which was to follow —and were probably cotemporary with the beginning of the plague next to be mentioned.

In the year of Rome 317, and B. C. 437 commenced a peſtilential ſtate that afflicted Rome for five years, or five ſeaſons ſucceſſively. The hiſtorian relates that the firſt year " a peſtilence invaded the people," and as the diſeaſe increaſed, prodigies alarmed them and frequent earthquakes overturned houſes in the country. The next year the diſeaſe was more mortal: " peſtilentior inde annus." In 320, the diſeaſe was ſo fatal as to ſuſpend all ordinary concerns. The people reſorted to their prayers, and the Sybilline books were conſulted and obeyed, to appeaſe the Gods and avert the plague from the people. For fear of famin, corn was purchaſed in Etruria, the Pontine territory and in Sicily. The mortality extended alſo to cattle. In 321, the diſeaſe was mitigated and afterwards ſubſided.

Livy b. 4. 21, 25.

This is the firſt inſtance, in which I am able to trace diſtinctly a *progreſſion* in the malignancy of the plague. That this is an important fact, in all plagues, will hereafter appear. But on this point, ancient hiſtory affords very ſcanty materials. This was a period of univerſal peſtilence for many years, and was marked with all the great phenomena of nature. The laſt year of the plague in Rome 321, correſponds with the year B. C. 433, two years before the plague of Athens. In the year of Rome 325, according to Hook, there was a moſt grievous famin, occaſioned by a ſevere drouth in all the Roman territory. " Siccitas eo anno plurimum laboratum eſt; nec cæleſtes modo defuerunt aquæ, ſed terra quoque, ingenito humore egens, vix ad perrennes ſubfecit amnes." By this, we are led to believe, that the drouth was not ſolely cauſed by a want of rain, but by an unuſual defect of ſubterranean ſprings and moiſture. The expreſſion, " ingenito humore egens," contraſted with the uſual ſource of water, rain, evidently carries with it an idea that the evaporation from the earth was *unuſual*; and this may eaſily be accounted for, by the violent action of internal heat or electricity which diſtinguiſhed this peſtilential period, and was evidenced by tremendous and univerſal earthquakes, and a great eruption of Etna.

The drouth in Rome was extreme—multitudes of cattle thronged round the arid fountains, and periſhed with thirſt. Diſeaſes followed, firſt invading cattle, and the lower claſſes of people and the countrymen, then extending to the city.

Livy b. 4. 30.

Thucydides relates b. 1 and 3, that earthquakes affected the largeſt part of the globe, and ſhook it with the utmoſt violence. In many places, there was ſevere drouth and a ſubſequent famin. In ſome places, the earthquakes produced alarming inundations of the ſea ; as in Eubœa and Atalanta—the Prytaneum, or town-houſe in Athens, the fortifications and ſome dwelling-houſes were demoliſhed. Theſe events were in the fifth and ſixth years of the Peloponneſian war, anſwering to 427 and 426 B. C. and conſequently were at the cloſe, or ſubſequent to the peſtilence. About the ſame time there was a violent eruption of Etna ; ſuch as had not been known for fifty years preceding. This period was alſo marked by the approach of a comet, but I am not clear that it was in the year B. C. 431, as ſtated by Dr. Prieſtley in his Lectures on Hiſtory. The drouth was probably within a few months of the appearance of the comet, according to numerous obſervations in late periods of the world : By which it would ſeem to be a law of the phyſical ſyſtem, that *preceding*, *during* and *following* the approach of thoſe erratic bodies, this earth is affected alternately with great rains and ſnows, drouth, violent tempeſts, high tides and earthquakes : Many inſtances will hereafter occur.*

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* We are ſometimes embarraſſed with the differences in the chronology of different authors. But we have, in this place, data that will fix certain points.

From the uniform operations of nature, there can be very little doubt, that all the great events of the phyſical world, in this period, happened within twelve or eighteen months of each other. The extreme drouth in Italy and Greece, mentioned by Livy and Thucydides, unqueſtionably occurred, at both places, in the ſame year. Livy places this under the conſulſhip of A. Cornelius Coſſus and T. Quinctius Pennus, which Hook arranges under the 325th year of Rome, and Lempriere, under the 327th.

Now Thucydides expreſsly relates, that the great earthquake which injured Athens, and produced the inundations in the Corinthian Gulf

The plague in Athens broke out in the ſecond year of the Peloponneſian war, when all the inhabitants of the Athenian territory, were crouded into the city, to avoid the deſtructive ravages of the Lacedemonians. This circumſtance alone would account for the production of peſtilential diſeaſes in the city. But it is probable that had the ſame event happened in a period of general health, the ſickneſs in Athens would have been limited to the dyſentery, the more violent camp fevers or common typhus.

But unfortunately this war broke out at a time of univerſal peſtilence, when the diſeaſes of the healthieſt countries aſſume new and more malignant ſymptoms, and hence we account for the duration and the violence of the malady. This idea ſeems to be important, and the only material one to be added to the excellent philoſophical account of the plague at Athens by Dr. Elihu H. Smith, late of New-York. Medical Repoſitory, vol. 1, art. 1. The origin of this peſtilence is ſtated by the hiſtorian to have been in that part of Ethiopia which borders on Egypt; thence extending to Egypt, Lybia, the King's dominions or Perſia, and to Greece. Some of the more violent of modern plagues have firſt appeared in the ſame region. But we are not to conclude from this deſcription that the diſeaſe is propagated by infection from perſon to perſon. It appears firſt where

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and the Sea of Eubœa, rending Atalanta from the main land, and ſwallowing up a town in Eubœa, happened in the ſpring or ſummer of the ſixth year of the Peloponneſian war. This war commenced in the ſecond or third year of the eighty-ſeventh Olympiad, correſponding with the years of Rome 323 or 324. The ſixth year then will be the 328th or 329th year of Rome. Theſe data bring the drouth in Rome to one of thoſe years; at leaſt they will not admit of its being placed earlier than the year 327, the year preceding the earthquake. It is probable therefore that Lempriere is right, in the arrangement of the conſuls. This is rendered more probable, by the eruption of Etna, in the ſpring of the ſame year; as it is a known and common fact, that earthquakes and eruptions of volcanoes are preceded by exceſſive drouth; owing probably to a gradual increaſe of ſubterranean heat, or unuſual electrical diſcharges and evaporation, ſome weeks, or months, before the exploſion.

The comet undoubtedly appeared either in the year, preceding, during or following the drouth; that is, in the year of Rome, 327, 328, or 329, correſponding with year before the Chriſtian era, 427, 426, or 425. It was moſt probably in the year of the drouth, and in the fifth year of the war, A. U. C. 327, and B. C. 427; the earthquakes and volcanoe followed in the ſpring of the next year.

the original or ſecondary cauſes, that is, general and local contagion, are the moſt powerful. If the ſtate of the atmoſphere over the world, at any one time, is equally vitiated by ſome unknown cauſe, its effects will firſt appear in places where that ſtate of air is moſt powerfully aided by *local* vitiation, as in cities or marſhy grounds. Of this we have numerous proofs. But, in modern times, whenever the general contagion, united with local cauſes, produces plague in Egypt or Conſtantinople, it produces ſome milder epidemic in the neighboring countries, and often, its effects are viſible, at the ſame time, in moſt parts of the world.

The Abbe Barthelemy, in his elegant Travels of Anacharſis, ſpeaking of the plague in Athens, ſays, " it was doubtleſs bro't into Greece by a veſſel from Egypt." It is to be regretted that ſuch an accurate and judicious writer ſhould have indulged *conjecture* on this intereſting ſubject. He quotes no authority for his opinion, and the words of Thucydides oppoſe the ſuppoſition. The diſeaſe firſt appeared in the Piræus, the harbor; and ſo ignorant were the people of the cauſe, that they aſcribed it to the poiſoning of the wells by the Lacedemonians. Beſides Thucydides impliedly acknowledges that he and others knew nothing of its origin; for he calls on " every one, phyſician or not, to aſſign any credible account of its riſe, or the cauſes powerful enough to produce it."

Plutarch, in his life of Pericles, ſays " the enemies of Pericles, attributed this diſaſter to the multitude of people he had collected into the city, during the heat of ſummer"—a charge in which there was much truth.

But when we attend to the violent concuſſions of nature, that accompanied and followed the peſtilence, and its general prevalence in the world for a ſeries of ten or twelve years, all attempts to trace its origin to infection, dwindle into puerilities; and the occaſional cauſes of ſickneſs, crouded population, heat and bad diet, tho powerful as auxiliaries, could not be adequate to the violent and continued effects in Athens, and the neighboring cities.

The ſymptoms of that diſeaſe in Athens, as deſcribed by Thucydides, are known to every medical man. They correſpond in all the eſſential particulars, with thoſe of the Yellow Fever in its worſt forms, and the diſeaſe was probably what I call the bilious plague. There is the more reaſon to believe this ſuppoſition, as Thucydides has not mentioned, among the ſymptoms, the buboes and other ſwellings of the glands, which diſtinguiſh the inguinal plague. The critical days were the ſeventh or ninth, as they have moſt frequently been in the bilious plague in America.

The diſeaſe extended to other towns in Attica, eſpecially to thoſe which were moſt populous, but Lacedemon eſcaped. It raged in Perſia at the ſame time, and it is ſaid, the King of Perſia ſent for Hippocrates to lend his aid in arreſting the progreſs of the peſtilence, but the latter declined leaving his own country.

It has been ſuppoſed that Hippocrates was in Athens during this plague; but this muſt be a miſtake. He was probably at Thaſus, an iſland, near the coaſt of Macedonia. The four epidemic years, which he has deſcribed, were cotemporary with the peſtilence in Athens; and this proves what will hereafter appear more fully, that in all great plagues, the epidemic or peſtilential principle extends to different countries, and often over the whole earth.

In this peſtilence, as we ſhall have occaſion to obſerve in many ſubſequent inſtances, the birds abandoned the infected atmoſphere.

In the year of Rome 341, and B. C. 413, a peſtilence aroſe which the hiſtorian repreſents as more alarming than fatal, "minacior tamen quam pernicioſior." This circumſtance affords ground to believe the peſtilence to have been a violent autumnal bilious fever, and not riſing to the utmoſt malignity of the plague.

The peſtilence of that year was *followed* by famin in the next; owing to a neglect of agriculture; the people having been principally occupied with ſedition, under their ambitious demagogues. It will be remarked that the famin was not the cauſe of the epidemic, for it ſucceeded it.

Livy, lib. 4. 52.

It is proper to remark here that all the preceding deadly plagues which had at times almoſt deſolated Rome, were certainly the produce of the country. The Romans were not a commercial people, nor had they any commercial intercourſe with Egypt, till the conqueſt of Carthage, two centuries and a half after this period. It was not till one hundred and forty ſeven years after the time now under conſideration, that the Romans owned a ſingle ſhip. When they tranſported troops into Sicily, they hired or borrowed veſſels for the purpoſe. Egypt was a granary of corn, but until after the conqueſt of Carthage, the Romans drew their ſupplies wholly from Italy and Sicily. There is no pretence therefore for ſuppoſing the plague ever imported into Rome; nor is there a ſuggeſtion in hiſtory, that its origin was ever aſcribed to that ſource.

In the year of Rome 353, and B. C. 401, happened a moſt ſevere winter. The Tyber was frozen over, and the high-ways rendered impaſſible by deep ſnow. Theſe were unuſual phenomena and deemed prodigies in that city. On the opening of ſpring, the weather changed ſuddenly from ſevere cold to great heat and drouth, and a mortal peſtilence enſued among men and cattle. The hiſtorian ſays nothing more of the cauſe of the mortality, than "Sive ex intemperie cœli, raptim ex mutatione in contrarium facta, ſive alia qua de cauſa, gravis peſtilenſque omnibus animalibus æſtas excepit, cujus inſanabili pernicie quando nec cauſa nec finis inveniebatur, libri Sibillini ex ſenatus conſulto aditi ſunt." On this melancholy occaſion was inſtituted the ceremony of the Lectiſternium to appeaſe the Gods and ſolicit the reſtoration of health.

Livy. b. 5. 13. 14. 15. Plut. Life of Camillus. Zoſimus. lib. 2.

With this period of peſtilence correſponds the dreadful plague which about 404 B. C. almoſt depopulated Carthage. The diſeaſe on the coaſt of Africa preceded its appearance in Rome, as it uſually does in modern times.

Soon after, the Carthaginians under Imilco, who were ſent to reduce Sicily which had revolted, were ſeized with the plague and the army was ſo weakened, that Imilco was compelled to abandon the iſland. Juſt before Imilco's arrival, an eruption of

Etna laid waſte the neighboring country. By an expreſſion of Juſtin, we have ground to believe a comet appeared about the ſame time. “ Imilco, qui multas civitates cepiſſet, repente *peſtilentis ſideris vi*, exercitum amiſit.”

Juſtin. lib. 19. c. 2. Diod. Sic. lib. 13. 14. Rol. An. Hiſt. b. 2. and 11.

This plague was remarkable for its ſymptoms, ſuch as violent dyſenteries, raging fevers, burning entrails, acute pains in every part of the body; and many were ſeized with madneſs, ſo that they ſallied forth into the ſtreets, and tore to pieces thoſe who fell in their way.

It was during the dry ſeaſon above mentioned that the Lake of Alba roſe ſuddenly, without apparent cauſe, and overflowed its banks—an event that cauſed great conſternation in Rome, but one that might well happen by a ſubterranean diſcharge of ſome water-fountains in the high adjoining hills.

This is one of the inſtances which will often occur, of a hard winter, followed by a dry hot ſummer, and therefore deſerves particular notice; for ſuch exceſſes in the temperature of the ſeaſons are among the cauſes of peſtilential diſeaſes.

A peſtilence broke out in the armies of the Romans and Gauls, while the latter, under Brennus, were beſieging Rome, Anno Romæ 361, B. C. 393. The Gauls, unaccuſtomed to ſuch heat, and placed between hills, where they were expoſed to a burning ſun, vapor and ſmoke, periſhed in ſuch multitudes, that, weary with burying dead bodies, the ſurvivors burnt them in piles.

Livy b. 5. 48.

Pliny, lib. 2. 26, mentions the appearance of a comet, or light in the heavens, called by the Greeks *docus* or *doces*, and by the Romans *trabs*, from its reſemblance to a beam, at the time of the defeat of the Lacedemonian fleet—“ Cum Lacedemonii, claſſe victu, imperium Greciæ amiſere,” By the laſt expreſſion, “the loſs of the empire of Greece,” I ſuppoſe he refers to the defeat of the fleet by Conon and the Perſians in the year of Rome 360, and B. C. 394. If ſo, the appearance of this comet, correſponds in time with the period of peſtilence laſt named.

A plague, occaſioned by dearth, is mentioned to have happened in the year of Rome 371, B. C. 383, but no particulars, worthy of notice.

A great earthquake in Peloponneſus is mentioned under the year B. C. 373.

Encyclopedia, art. Chronology.

In the year of Rome 388, B. C. 366, commenced a moſt deſolating plague of three years duration. This was a time of profound peace, "ab ſeditione et a bello quietis rebus, ne quando a metre ac periculis vacarent, peſtilentia ingens orta." It ſeemed to be the deſtiny of Rome never to be exempt from fear and dangers; for when war and ſedition ceaſed, peſtilence aroſe.

Livy b. 7. 1.

In this horrible plague, periſhed the great Camillus, and it is related that, in the height of the diſeaſe, 10,000 citizens died in a day.

On this occaſion, recourſe was had to the ceremony of the Lectiſternium,* and to the inſtitution of new games to appeaſe the wrath of the Gods, but without ſucceſs. Some old citizens mentioned an ancient practice, in ſuch calamities, of driving a nail into the wall of a temple. This law was now revived, and a nail driven into the wall of Jupiter's temple. The time of the year, in which the law directed this ceremony to be performed, the *ides of September*, indicates the period when peſtilence began in Rome to be alarming and violent.

Functius, in his chronology, aſſigns the abſorption of Helice and Bura, two towns on the Gulf of Corinth, to the year of Rome 373, the year of the great earthquake in Lacedemon—in which caſe that cataſtrophe would make a part of the events of the peſtilential period of 371, juſt mentioned.

Muratori and Paulus Diaconus ſeem not to differ eſſentially in arranging that event under the ſame period. "Sæviſſimo terræmotu Achaia univerſa commota eſt, et duæ tunc civitates, Bura et Helice, abruptis locorum devoratæ."

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* This ceremony conſiſted in placing the ſtatues of Apollo, Latona, Diana, Hercules, Mercury, and Neptune, on three beds, and ſerving them with magnificent repaſts for eight days—a mode of checking the peſtilence, about as rational as the modern ſcheme of confining it to the infected place by bodies of armed men, which is much praiſed by Monteſquieu!

Muratori, Gen. Hiſt. vol. 2. 7.

Other authors refer this cataſtrophe to the period of peſtilence laſt mentioned, which ſome writers place in the year of Rome 388, and others, in 384; but all agree that it was during the approximation of a comet. This laſt peſtilence was dreadful in the extreme, ſparing no age or ſex. The year after it, the earth opened and exhibited a vaſt chaſm in the midſt of Rome, into which M. Curtius precipitated himſelf for the ſalvation and proſperity of the city.

Livy, b. 7. 7.

P. Oroſius and P. Diaconus, followed by Muratori, place the commencement of this plague in the year of Rome 384. Oroſius ſays that " in the 103d and 105th Olympiad, Italy was ſhaken a whole year, by tremendous earthquakes. The hundred and third Olympiad, according to our common chronology, comprehends the years of Rome from 386 to 389, incluſive. It is probable that in one of the ſhocks of this ſeries of earthquakes, the chaſm was made in Rome as already related. It will be obſerved that this event *followed* the peſtilence.

The comet that appeared, during this calamity, was probably that mentioned by Ariſtotle, Meteorol. lib. 1. ca. 6, of which he was an eye-witneſs.

But I muſt not omit what authors relate concerning the peculiar character of this plague. Oroſius ſays, it was not ſuch a peſtilence, as uſually proceeded from irregular ſeaſons, extreme drouth, ſudden heat of the ſpring, unſeaſonable moiſture of ſummer and autumn, or the impure air blown from the Calabrian groves; but ſevere and continued, attacking all deſcriptions of people, and either deſtroying their lives, or leaving them in a weak and miſerable condition.

The winter when the comet appeared Ariſtotle relates to have been cold; but the ſeverity and duration of the plague cannot be accounted for on the principle of changes or irregularities in the ſeaſons. It was one of thoſe violent epidemics which never afflict mankind, without ſome eſſential alteration in the inviſible properties of the atmoſphere, or a peculiar effect of the atmoſphere on living bodies.

Seneca, on the authority of Ariſtotle and Caliſthenes expreſsly aſcribes the inundation to the approximation of a comet. “ Cometes ingentis rei traxit eventus, cum Helicen et Burin orto ſuo merſit.”

Nat. Queſt. lib. 7. 16.

The ſymptoms of this approaching calamity are deſcribed to have been theſe. “ For ſeveral months the waters of heaven deluge the earth or withhold their beneficial effects; a dimneſs obſcures the ſplendor of the ſun; or his diſk appears like a burning brazier; impetuous winds ravage the country; and ſtreams of fire are ſeen to ſhoot in the air.” See Travels of Anacharſis, vol. 3. 404, cited from Pauſanius, lib. 7. ca. 24.

Some of theſe phenomena, exceſſive rains and drouth, tempeſts, celeſtial lights, and ſingular appearances of the ſun, always attend the approach of comets; and it is ſurpriſing that the moderns have taken little or no notice of the fact.

The cataſtrophe of Helice and Bura was occaſioned by violent ſhocks of earthquakes, with contrary and conflicting winds, which ſwelled the water in the Corinthian gulf, above the tops of trees on the ſhore. This was in the winter, during the night, and juſt before the battle of Leuctra. It is fortunate for us that we have a correct account of this inundation; for it perfectly unfolds the true hiſtory of the deluges in the time of Ogyges and Deucalion.

In the year of Rome 391, there was an extraordinary darkneſs in Italy, during the greateſt part of the day; “ dilata nox uſque ad plurimam partem diei;” and a ſingular hail ſtorm.

Muratori, vol. 1. 11.

In the year of Rome 405 and B. C. 349, a peſtilence is mentioned, but with no circumſtances that deſerve notice, except that it was in time of peace and internal tranquillity. “ Quum et foris pax et domi concordia ordinum otium eſſet, ne nimis lætæ res eſſent, peſtilentia adorta”—and recourſe was had to the Sybilline books and the Lectiſturnium. The circumſtance of the prevalence of plague in time of peace, will be often noted, to refute the idle notion, that peſtilential diſeaſes are generated and propagated principally by armies in time of war.

☞ After writing the foregoing, I found in Pliny, Nat. Hiſt. lib. 2. 25, an account of a comet in " the hundred and eighth Olympiad, and year of Rome 398." It reſembled at firſt a creſt, but changed into the form of a ſpear. Now, the firſt year of the 108th Olympiad, according to common chronology, correſponds with the year of Rome 406. There is therefore a difference between the common mode of reckoning by the Olympiads, and Pliny's mode, of at leaſt eight years or two Olympiads.—By following the common mode, and placing the firſt year of the 108th Olympiad, againſt the 406th year of Rome, the appearance of this comet will coincide with the general tenor of facts, hereafter to be related, and correſpond nearly in time with the plague in Rome, mentioned above.

Nearly at the ſame time, there was an eruption of Etna, placed by authors in the year B. C. 350, correſponding with the year of Rome 404. It is probable this eruption was within a year or two of the appearance of the comet; according to many modern facts of the ſame kind.

In the year of Rome 422, a violent plague aroſe, which, ſays P. Diaconus, was ſuppoſed to proceed from corrupt air, until the conſpiracy of the Roman women to poiſon their huſbands was detected; after which it was aſcribed to that cauſe. Livy does not appear to credit popular opinion on this occaſion. He ſays, " Fœdus inſequens annus; ſeu intemperie Cæli, ſeu humana fraude fuit"—Recourſe was had to the uſual remedies, driving the nail, and the Lectiſternium.

Livy b. 8. 18. Auguſt. Hiſt. P. Diac.

A peſtilence again appeared in Rome in the year 440, but no particulars are ſtated.

Livy 9. 28.

In the year preceding, there was an inundation at Rhodes.

In the year of Rome 458, B. C. 296, commenced a moſt ſevere peſtilence which continued for three or four years. In he third year, a hard winter appears to be related by Livy, who ſays, " the ſnow filled all places, nor was it poſſible to endure the weather abroad." This was however in the mountainous country of the Samnites. The Roman conſuls celebrated their triumphs over the Samnites, during this mortal epidemic, and it was a curious ſpectacle to behold at the ſame time, triumphal and funeral proceſſions, and lamentations for the dead, mingled with acclamations of joy.

Oroſius, b. 3. 21. Livy, b. 10. 31 et ſeq.

This plague commenced with many alarming prodigies, and violent tempeſts. A remarkable cloud and extreme darkneſs, for the greater part of a day, is mentioned by Livy, under favor of which the Samnites attacked the Roman lines. This darkneſs is mentioned, on account of the frequency of the phenomenon, during peſtilential periods.—Perhaps this appearance may be connected with the cauſe of peſtilence.

The violence and duration of this plague induced the Romans to ſend to Epidaurus for Eſculapius, which they imported in form of a ſerpent, and in the iſland of the Tyber, where it was firſt landed, they conſecrated a temple to the God of Phyſic.

Livy, Epit. 11.

It is not improbable, that the firſt eruption of Lipari, recorded in hiſtory, happened during this period; as it was in the reign of Agathocles, who died a few years after the time of this peſtilence. The eruption is mentioned by the hiſtorian Callias whoſe works are loſt; but the authors who cited them, have mentioned theſe particulars, that the eruption continued for ſeveral days, throwing great ſtones to the diſtance of a mile; and the ſea boiling all round the iſland.

In the year of Rome 477, and B. C. 277, happened that remarkable plague which is often mentioned, as particularly fatal to pregnant women and breeding cattle. "Gravis peſtilentia urbem ac fines ejus invaſit; quæ, cum omnes, præcipue mulieres pecudeſque corripiens, necatis in utero fœtibus, futura prole vacuabat."

Oroſius, lib. 4.

This alſo happened in time of peace. The words of the hiſtorian are remarkable. "Sed Romanorum miſeria nullis ceſſat induciis. Conſumitur morborum malis intercapedo bellorum; et cum foris ceſſatur a prœliis, agitur introrſum ira de cœlo." The miſeries of the Romans have no truce. The intervals between their wars are waſted with the calamities of ſickneſs ; and when they are exempt from war abroad, they are afflicted by the wrath of heaven at home.

Short on air has placed this diſeaſe in the year of the world 3712, correſponding with the year of Rome 462, but his chronology is often inaccurate.

In the year of Rome 482, a peſtilence broke out in Rome, and raged two or three years, carrying off countleſs multitudes of people. This was preceded by an eruption of fire at Calenum, which continued for three days and nights, deſtroying the ſoil for a conſiderable extent. This period alſo was diſtinguiſhed by earthquakes, in the third year of the peſtilence.

Oroſius. b. 4 P. Diaconus.

This period was memorable for a ſevere winter. The ſnow, to a prodigious depth, lay in the forum for forty days.

It will be found as we proceed with this hiſtory, that moſt of ſuch extraordinary ſeaſons and unuſual concurrence of great agitations in nature, happen during volcanic eruptions and the approach of comets to the ſolar ſyſtem of which this globe is a part. That comets were viſible, during the calamitous periods mentioned in the Roman hiſtory is probable ; but unfortunately few inſtances are recorded, until after the Chriſtian era.—Not an eruption of Veſuvius is mentioned, and I cannot find more than fourteen inſtances of eruptions from Etna, anterior to the ſame era. This defect of hiſtory is of no ſmall concern in a treatiſe of this kind.

In the year of Rome 529 and B. C. 225, the Roman armies which were marching into Gaul, were retarded by violent rains, and the plague which infected the ſoldiers. The Romans were, as uſual on ſuch occaſions, frightened at numerous prodigies. In Hetruria, uncommon lights were ſeen in the ſky. Meteors were ſeen at Ariminum, and the waters of a river in Picenum appeared like blood. A violent earthquake overturned the famous Coloſſus of Rhodes, and the ſhock was felt in Italy.*

Plut. Life of Marcellus. Oroſius. b. 4 P. Diaconus. Muratori vol. 1. 16.

Some of the prodigies, mentioned by Roman hiſtorians, and which have been ridiculed by moderns who are too wiſe to ſtudy the operations of nature, and too proud to believe in extraordinary occurrences, will be hereafter explained.

During the battle near the Lake Thraſamene, a ſevere earthquake was experienced, which, it is ſaid, the armies did not perceive. Pliny Nat. Hiſt. lib. 2. 84. This was in the year of Rome 536, and B. C. 218; in which year, Livy relates, b. 21. 61, there was a ſevere winter. Scipio was beſieging a town in Spain, near the preſent Barcelona, and for thirty days, the ſnow was four feet deep. This is mentioned as a circumſtance very unfavorable for the beſiegers. I cannot help remarking how cloſely connected in time are great froſts and violent earthquakes. This was the winter in which Hannibal croſſed the Alps and entered Italy. He reached the Alps early in November and was nine days in arriving to the ſummit. His army ſuffered incredible hardſhips and loſſes from deep ſnow, bad roads, and the natives who killed many of the troops. At the end of fifteen days, he gave his troops reſt, on the hills near the foot of the Alps, and altho the ſnow was deep on the mountains, he found in the vales, paſturage for his horſes and elephants. He proſecuted his route in the winter, ſuffering great hardſhips from ſnow, and more from rains, which ſwelled the rivers. Early in the ſpring he croſſed the Appenine, and here his troops again ſuffered from a ſnow ſtorm.

See Livy. lib. 21. Polybius. lib. 3.

At the ſiege of Syracuſe by Marcellus in the year of Rome 541 and B. C. 213, happened a remarkable mortality, among the troops, but eſpecially among the Cathaginians, who all periſhed with their Generals, Hippocrates and Himilco. Of this peſtilence, Livy gives the following account, b. 25. 26. "A peſtilence broke out in both armies, which diverted their minds from the concerns of the war; for it was in autumn, and in a ſituation naturally unhealthy. The heat, which was more ſevere without the city than within, affected almoſt every perſon in both the camps. At firſt, perſons ſickened and died, by reaſon of the unwholeſomeneſs of the place; afterwards the diſeaſes ſpread by infection, ſo that thoſe who were ſeized, were neglected, or abandoned and died, or their attendants contracted the ſame diſeaſe. Daily burials and death were before their eyes, and day and night their ears were aſſailed with lamentations. At length the ſurvivors became hardened; they neither grieved at the death of others, nor took pains to bury the dead; and the bodies of the deceaſed lay ſcattered along the ſtreets, in ſight of thoſe who were expecting the ſame fate. The dead infected the ſick, and the ſick, thoſe in health, with terror and peſtiferous ſtench; and ſome, preferring death by the ſword, ruſhed on the poſts of the enemy.

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* The compilers of the Encyclopedia, Dufreſnoy and Functius, place this event in the year B. C. 224, and Rollin and Univerſal Hiſtory in 222.

Rome was overflowed, according to Univerſal Hiſtory in 231 B. C. This event may belong to the ſame period; but the compilers of that hiſtory differ in chronolgy from Hook and the common chronology which I have followed.

But the diſeaſe was much more ſevere and fatal to the Carthaginians, than to the Romans, who, in this long ſiege, had become accuſtomed to the air and water. The Sicilian troops, on the firſt breaking out of the diſeaſe, abandoned their allies, and returned to their homes. The Carthaginians, who had no means of ſhelter, all periſhed. Marcellus, to avoid the evil, drew his troops into the city, where their enfeebled bodies were refreſhed by the ſhades of the houſes. Many however of the Roman army, died of the ſame diſeaſe."

It is obſervable that heat and poſition augmented the diſeaſe among the Carthaginians. They were encamped near a marſh or low ground; and expoſed to the direct rays of a burning ſun. The Romans had poſſeſſion of one part of Syracuſe, and had ſhelter under the buildings. Theſe circumſtances, and their not being accuſtomed to the air of the place, proved fatal to the whole Cathaginian army. Mr. Brydone learnt in Sicily from the hiſtoriographer of Etna, Recupero, that there was a great eruption of Etna, during this ſiege of Syracuſe. I have not met with an account of it in the original hiſtories I have conſulted.

In the ſame year, that this peſtilence raged in Syracuſe, a ſevere peſtilential epidemic prevailed in Rome. "Eo anno peſtilentia gravis incidit in urbem, agroſque; quæ tamen magis in longos morbos, quam in perniciales, evaſit."

Livy, 27. 23.

This fact is evidence of what will be fully proved in later periods of the world, that a peſtilential ſtate of air extends, at the ſame time, over many parts of the world; and that if a violent plague is raging in one place, malignant diſeaſes, if not plague, prevail in other places.

Another important fact related in the laſt quotation, is that the peſtilence in Rome was the bilious plague, as it was not ſo mortal, as it was troubleſome, by running out into long diſeaſes.

It is a known fact and not unfrequent, that the Yellow Fever, in our climate, is reduceable to a bilious remittent and even to an intermittent; the peſtilence on board the ſhips at Bulama often ran out into long and obſtinate intermittents. The fever in Baltimore in 1797 began in the form of a bilious remittent, and continued in that form for many weeks, before it aſſumed the ſymptoms of a malignant Yellow Fever.

The Roman and Carthaginian armies in Bruttium, a town in the ſouthern part of the Kingdom of Naples, ſuffered greatly by a peſtilential diſeaſe, in the year of Rome 548; but no particulars worthy of notice are recorded.

Livy, b. 28. 46

It is however to be remarked that this period of peſtilence was diſtinguiſhed by the appearance of immenſe ſwarms of locuſts, which overſpread the whole country about Capua. Their appearance was ſubſequent to the plague mentioned in the armies. We ſhall have frequent occaſion to mention the ſame phenomenon in the natural world, as cotemporary with peſtilence. But clouds of theſe animals rarely or never appear at any other time, than during or near the time of the prevalence of plagues; and by comparing the dates of their appearance, it will be found, that they are not, unleſs by accident, the cauſe of plague, nor the effect; but, like other animals which are generated in myriads, during peſtilence, the produce of ſome general cauſe, and probably of that ſtate of the elements, which occaſions the diſeaſes of the human race.

Livy, 30. 2.

During the war between the Romans and Antiochus, king of Syria, in 563, an event took place, ſimilar to many inſtances related by Dr. Lind. The Roman fleet, with that of the Rhodians, in ſearch of the Syrian fleet, put into the gulph of Pamphylia and anchored at Phaſelis. But it was in the midſt of ſummer, and the place unwholeſome; and the men, unaccuſtomed to the air, were ſeized with a peſtilential diſeaſe, eſpecially the rowers. Why the rowers? evidently becauſe they were more expoſed to a hot ſun, to the air and to fatigue, than the troops on board. This ſickneſs induced the commander to quit that ſtation, and we hear no more of the epidemic.

Livy, b. 37. 23.

In the year of Rome 571 and B. C. 182 commenced a violent plague, which laſted ſeveral years,. and ravaged Rome and all Italy ſo that the Romans could not enliſt 8000 ſoldiers to quell a revolt. In the next year, Livy mentions a drouth of ſix months, and a conſequent dearth of corn.

It will be remarked by any man who reads hiſtory with attention, that during peſtilential periods, all the ordinary operations of nature acquire unuſual ſtrength and magnitude. Earthquakes and tempeſts are vaſtly more violent, than at other times. The ancient hiſtorians, evidently without deſign, have left proofs of this fact. Thus Livy mentions, that during the period under conſideration, the operations of the war in Spain were retarded by continual rains, which ſwelled the rivers, and Flaccus, the Prætor, was compelled, tempeſtatibus fœdis, terrible ſtorms, to order his whole army into a city in the neighborhood.

Livy, b. 40. 33. and ſec. 29. 36.

The ſpring of the year 571 was remarkably tempeſtuous, and Livy gives a frightful account of a ſtorm in Rome which did no ſmall injury to the public buildings.

B. 40. 2.

Short has placed this peſtilence in the year of the world 3763, correſponding according to Uſher with the year of Rome 507. But Short's chronology is wretched. He mentions a large comet ſix years after this period, of the ſize of the ſun and of a fiery color. Of the appearance of a comet at the period under conſideration, there can be no doubt, tho I have not found the original writer who mentions it and Short quotes no authority but Pozel. He however has made an egregious blunder in the time, as he has in many other inſtances of facts which he relates, of high antiquity.

The order of the great phenomena of nature ſeems to be that violent ſtorms, rain and a cold winter, are followed the next year with exceſſive heat and drouth and vice verſa. Violent ſtorms however occur at all times during theſe periods. It will be noted, that the peſtilence above mentioned could not be occaſioned by the drouth and dearth of corn, for it broke out in the year preceding. The ſame fact often occurs, and proves that great peſtilence is not ſolely the effect of intemperate ſeaſons, but that both are the effects of another cauſe.

The preſent inſtance is one, in which a moſt ſevere winter followed the other unuſual ſeaſons. In the year 574, according to Hook, and the conſulſhip of Q. Fulvius and L. Manlius, the winter was remarkable for deep ſnow and every kind of tempeſt. It continued longer than uſual, and trees, expoſed to the weather, were blaſted. An earthquake happened, in the following year.

Livy, b. 40. 45. 59.

This then fixes the year of the appearance of the comet, mentioned by Short. That he refers to the ſame period is certain from his mentioning the circumſtance of the inability of the Roman ſenate to raiſe a body of 8000 men; a fact aſſigned by Hook to the year 571, and which can belong to no other period. But from his deſcription of this ſtar, I am inclined to believe he refers to that which is hereaſter mentioned, under the great peſtilence of 610, and which Pliny has well deſcribed.

This uncommon ſeaſon was ſucceeded in 576 by peſtilence among cattle, and the next year, followed the plague, which made dreadful havoc in Rome. Some facts ſtated by the hiſtorian deſerve particular notice. "Peſtilentia, quæ priore anno in boves ingruerat, eo verteret in hominum morbos. Qui inciderant, haud facile ſeptimum diem ſuperabant: qui ſuperaverant, longinquo, maxime quartanæ, implicabantur morbo. Servitia maxime moriebantur; eorum ſtrages per omnes vias inſepultorum erat. Ne liberorum quidem funeribus ſubficiebat. Cadavera, intacta a canibus ac vulturibus, tabes abſumebat: ſatisque conſtabat nec illo, nec priore anno, in tanta ſtrage boum hominumque vulturium uſquam viſum."

Livy b. 41. 21.

It is not eaſy to do juſtice to this energetic deſcription of the hiſtorian, but the following is the ſenſe of the paſſage. "The peſtilence which had affected cattle in the former year, now turned into diſeaſes of men. Thoſe who were ſeized ſcarcely lived beyond the ſeventh day; thoſe who ſurvived that day, were afflicted with tedious diſtempers, eſpecially the quartan ague. The diſeaſe made its moſt fatal ravages among the ſlaves, whoſe dead bodies lay unburied along the highways. It was not poſſible to bury the bodies of the free citizens. Their corpſes lay unburied, untouched by dogs and vultures, and waſted away by corruption. It was evident that in this and the former year, during the great mortality among men and cattle, no vulture was ſeen."

In this account, the following particulars are noticeable.

1ſt. That the peſtilential air firſt produced its effects on cattle.

2d. That the *ſeventh* was the critical day—as it uſually is, in modern bilious plague.

3d. That if the diſeaſe had a favorable criſis on the ſeventh day, the patient ſurvived, but the diſtemper changed into an autumnal bilious fever of the quartan type, and long duration—a ſtrong evidence of what I have before remarked that, if peſtis and peſtilentia are diſeaſes of a diſtinct ſpecies, the Roman peſtilence was the bilious plague.

4th. This peſtilence was, as uſual, moſt mortal among the lower orders of people.

5th. Carnivorous animals would not touch the dead bodies, and vultures deſerted the atmoſphere of Rome.

The laſt fact is common in *great* plagues; but in plagues of a leſs malignancy, animals do not quit the infected places. Theſe facts ſeem to indicate that birds perceive the peſtilential ſtate of air, before it becomes ſenſible to the human ſpecies. It ſeems that the vultures diſappeared, the firſt year, while the peſtilence was confined to cattle; and there can be little doubt, that the delicate organs of fowls perceive the derangement of the air, whether the cauſe may be, the infuſion into it of a peſtiferous vapor, or the abſtraction from it of a portion of the vital principle, before its effects are viſible in larger animals, and before the air is rendered offenſive by the carcaſes of diſeaſed and dead animals.

This was one of thoſe violent and long continued plagues of which hiſtory has recorded many inſtances : and the Romans on this occaſion, ſaw many prodigies. It is difficult, in ſome caſes, to diſtinguiſh, in the relations of hiſtorians, truth from vulgar report ; and philoſophy muſt guard againſt the illuſions of credulity and terrified imaginations. I take no notice of the monſters born, and an ox's ſpeaking, on theſe occaſions. At the beginning of the late American war, many ſimilar prodigies were announced and believed by the ignorant and credulous. But ſome of the phenomena, enumerated by Livy among prodigies, in all probability, had a real exiſtence, for it will be related hereafter that ſimilar appearances have been obſerved, in modern times, during peſtilence, and appear evidently to have a connection with its cauſes.

During the plague above mentioned, a bow was ſeen in the ſky, in a ſerene day, extended over the temple of Saturn in the Roman forum ; three ſuns or haloes appeared, and at night many torches, or meteors deſcended in Lanuvium. There is ſtrong evidence for believing theſe phenomena to be occaſioned by a vapor emitted from the earth, in ſuperabundant quantities, and which there is reaſon to think, may be the cauſe of peſtilential diſeaſes ; or there may be ſome changes in the combination of ſubſtances compoſing the atmoſphere.

At the cloſe of this peſtilential period, in 581, Apulia was deluged by ſwarms of locuſts ; as the Pontine territory had been the year before. So deſtructive were their ravages, that the Prætor Sicinius was ſent with an army to drive them away.

Livy, b. 42. 2 & 10.

Oroſius b. 4 relates, that a moſt violent plague deſolated Rome in the year 610 and B. C. 144. The dead bodies lay putrefying in the houſes and ſtreets, and rendered it impoſſible to approach the city. In the preceding year appeared a remarkable comet. As we come down to the more authentic periods of hiſtory, this phenomenon will more frequently occur.

It is again neceſſary to remark a difference in the chronology of different authors. Seneca places the appearance of this comet, which he deſcribes to have been as large and luminous as the ſun, "Poſt mortem Demetrii Syriæ Regis, paulo ante Achaicum Bellum"—after the death of Demetrius, king of Syria, and a little before the Achean war.

Nat. Queſt. lib. 7. 15.

Demetrius was ſlain, B. C. 151, according to common chronology, and the Achean war was in the year when Carthage was taken and deſtroyed by Scipio, B. C. 146. The appearance of the comet therefore ſhould be placed in the year preceding, or 147, correſponding with the year of Rome, 607. And this is probably correct, for it is agreeable to general obſervation, that a comet appears early in the peſtilential period, and often *precedes* its moſt calamitous years.—The Encyclopedia aſſigns it to the year 146.

Seneca remarks that at firſt it appeared fiery and red, emitting a bright light, ſo as to overcome the darkneſs of the night. Gradually its magnitude leſſened and its brightneſs vaniſhed.

This plague was ſtill more deadly than that in which Camillus died.

Muratori, vol. 1.

In the year of Rome 628, and B. C. 126, hiſtorians relate, that a moſt dreadful peſtilence aroſe in Africa, from dead locuſts. Theſe animals were brought towards Numidia and Utica, by a ſtrong eaſt wind, in ſuch innumerable multitudes, that they devoured every green thing—not ſparing even the bark of trees. They were driven by the ſouth wind into the Mediterranean, and being waſhed on ſhore, in the hot ſeaſon, they putrefied, and cauſed a moſt deadly plague. It is related that 800,000 perſons periſhed in Numidia alone; 200,000 on the ſea coaſt of Carthage and Utica, and 30,000 of the Roman troops. No leſs than 1500 dead bodies were carried out of one gate of Utica, in a ſingle day.

Livy, Epit. 60. Oroſius, lib. 5. P. Diac. Auguſt. Hiſt. 813.

Authors aſcribe this plague to the dead locuſts; and doubtleſs that cauſe had its influence. At the ſame time, there is no neceſſity of reſorting to the locuſts, for this was a time of general peſtilence. The ſame ſtate of air or other elements which favored the generation of diſeaſe, firſt exiſted, and produced this unuſual number of locuſts. This will appear in ſubſequent parts of this hiſtory.

Oroſius gives a moſt hideous account of the peſtiferous ſtate of air from the locuſts. He avers that birds, cattle and wild beaſts periſhed by means of the corruption of the air, and thus increaſed the evil. He remarks further that, altho locuſts had often appeared in his days, in great numbers, yet they never before had done more miſchief when dead, than when living, ſo as to cauſe mankind to wiſh they had not periſhed.

We muſt accede to the opinion of the ancients that the ſtench of the locuſts was one cauſe of the peſtilence; it is poſſible that no epidemic diſeaſe would have been excited without that cauſe; but it is equally true, that in a healthy ſtate of the atmoſphere, no putrefaction of dead bodies has ever been known to produce an epidemic peſtilence. It may be powerful enough to excite diſeaſe within a ſmall extent of its own atmoſphere; but if no other cauſe of diſeaſe exiſts, it will not extend beyond that infected atmoſphere.

The appearance of immenſe multitudes of locuſts, during peſtilence, is a curious fact in natural hiſtory, and well deſerves inveſtigation; but theſe animals do not always *precede* the appearance of the diſeaſes of the ſame period, nor do they often periſh in ſuch collections as to be the *cauſe* of thoſe diſeaſes. The common idea in Arabia, is, that they are generated by heat and drouth. Cold and rains are ſuppoſed to deſtroy their eggs.

About the beginning of this deſtructive period, appeared a comet. The Encyclopedia mentions *two*, in the year of Rome 629, and B. C. 125. But it is probable this is a miſtake of the compilers. The univerſal hiſtory places one under the year 630, and a ſecond under the following year, quoting Juſtin, for authority. But Juſtin mentions two comets, one at the birth of Mithridates, another in the year he began to reign. Now Mithridates was about eleven or twelve years old when he came to the throne, in the year of Rome 631, and B. C. 123. Of courſe the firſt comet muſt have been about the year 620, and B. C. 134.

It is no inconſiderable proof of the truth of Juſtin's account, and of the accuracy of our chronology in this particular, that there was an eruption of the great volcano of Sicily, in both the periods when theſe comets are ſaid to have appeared. In the year 620, and B. C. 134, there was an eruption of Etna, tho not mentioned by Juſtin; and this was the year of the firſt great comet, and of the birth of Mithridates. Nine years after, in 629, there was a ſecond eruption of Etna. The laſt year correſponds nearly with the period in which Mithridates began to reign, allowing him to be eleven years old, and with the approach of the ſecond comet.

This laſt comet produced moſt tremendous effects, as we might expect from its magnitude, and proximity to the earth. The following is Juſtin's deſcription of it. "Nam et eo quo genitus eſt anno, et eo quo regnare primum cœpit, ſtella cometes, per utrumque tempus, 70 diebus ita luxit, ut cœlum omne flagrare videreter." For 70 days the heavens appeared to be in a flame.

Lib. 37. 2.

The eruptions of the volcano were equally remarkable.

The lava from Etna laid waſte the city and ſuburbs of Catana. "Ætna ultra ſolitum exarſit, ſays the hiſtorian; Catanam urbem fineſque oppreſſit."

Oroſius, lib. 5.

In Paulus Diaconus we have a relation of ſingular facts in regard to the eruption of Etna. Globes of fire were thrown from the Crater. Lipari, a ſmall volcanic iſland on the north of Sicily, became ſo heated, during the eruption, that the rocks were diſſolved, tho it is not ſaid that this iſland diſcharged any fire. The water of the neighboring ſea was ſo heated as to kill the fiſh, and melt the pitch on the decks of veſſels. Dead fiſh appeared on the ſurface of the water, and many perſons, who were near the iſland, were ſuffocated with heat.

This author places the appearance of the locuſts which cauſed the plague in Africa, in the year *after* the eruption of Etna.

Others place this event, a year *before* the eruption. It is much to be regretted that authors have been ſo careleſs of the chronology of important phenomena, on the *order* of which may depend important principles. This however is certain, that all the great agitations of nature here related belong to the ſame period, and it is not ſurpriſing that they were attended with moſt mortal peſtilence.

For authorities ſee Livy, Epit. 60. Oroſius, lib. 5.
P. Diaconus, in Auguſt. Hiſt. 813. Juſtin, lib. 37.
2, 3. Uſher's Annals, 498. Muratori, vol. 1, p. 26.

The foregoing period of peſtilence was one of the moſt dreadful on record.

It will be found invariably true, in every period of the world, that the violence and extent of the plague has been nearly proportioned to the number and violence of the following phenomena—earthquakes, eruptions of volcanoes, meteors, tempeſts, inundations

During the civil wars excited by Sylla and Marius, the armies loſt ten thouſand men by the plague, in the year of Rome 665, and B. C. 89.

Univerſal Hiſt. vol. 13. 59. Vel. Paterc. lib. 2. 21.

It muſt have been during this period that the comet appeared which is mentioned by Pliny. Nat. Hiſt. lib. 2. cap 25. "Civili motu, Octavio Conſule," for this was the year, in which Octavius was Conſul. This period was preceded by an extraordinary colliſion and diſrupture of two mountains, and the burſting of fire from the chaſm, in the territory of Modena. Pliny aſſures us, this was ſeen from the Emilian way, by an immenſe number of Roman knights and others.

Pliny Nat. Hiſt. lib. 2. 83.

With this period correſponds the eruption of a volcano in Hiera, one of the Æolian iſles, north of Sicily, now called Lipari, which burnt for ſeveral days, and the very ſea around it appeared to be fire. Pliny ſays this was during the Social War.

Lib. 2. 106.

The year B. C. 44 was diſtinguiſhed by the death of Julius Ceſar, by the hands of conſpirators; ſoon after which appeared a comet, ſuppoſed to be the ſame which appeared in

1680, whoſe period is calculated to be 575 years. If this is its period, it muſt have been ſeen in the year B. C. 1767, in the reign of Ogyges, when Attica was inundated and rendered barren for a number of years; and when the planet Venus is ſaid to have changed her figure, color and courſe. When we ſurvey the uniform effects of comets in tempeſts and floods, and compare the traditional account of that event with the terrible inundations which have happened in Greece at other times, and eſpecially with that in the time of Thucydides, which rent Atalanta from the main land; which events all took place during the approach of comets; we are conſtrained to believe the fact of the Ogygean deluge, and fable riſes to the dignity of authentic hiſtory. This inundation might have happened during the approach of ſome other comet, but the probability is, that it was during that of the comet under conſideration, which fixes the time of the Ogygean flood, in the year B. C. 1767. This circumſtance may ſerve to correct the chronology of the early events in Greece.

See Jackſon's chronology vol. 3. 312.

Its next appearance muſt have been in the year A. C. 1193, when Electra, one of the pleiads, abandoned her ſiſter orbs, and fled from the Zodiac to the north pole.

Its third appearance correſponds with the year A. C. 618, the year of the terrible comet of the Sybill, ſays Gibbon; and its fourth, is the one under conſideration. Its ſubſequent appearances A. D. 531, 1106 and 1680 will be hereafter mentioned. All the periods here named, which come within the limits of authentic hiſtory, have been remarkable for peſtilence, earthquakes, inundations or other great phenomena. Such was the fact in 44 and 43. There was a terrible inundation of the Tyber, a violent earthquake, many unuſual phenomena in the ſky, and in the year 43, a violent eruption of Etna.—Peſtilence, as uſual, accompanied theſe events.

But another phenomenon, the paleneſs or defect of light, in the ſun, deſerves more particular attention. Pliny aſſerts that this pale color laſted almoſt a year. His words are, "Fiunt prodigioſi et longiores ſolis defectus, qualis occiſo dictatore Cæſare et Antoniano bello, totius pene anni pallore continuo." Nat. Hiſt. lib. 2. 30.—Virgil and Ovid, who were eye witneſſes of this phenomenon, have both deſcribed it, with the other prodigies of this period.

> " Ille (ſol) etiam extincto miſeratus Cæſare Romam,
> Cum Caput obſcura nitidum ferrugine texit."—
>
> Georg. lib. 1. 466.

> " Phœbi quoque triſtis imago
> Lurida ſollicitis præbebat lumina terris."
>
> Metamorph. lib. 15. 785.

The words *ferrugo* and *luridus* give us an exact idea of the color—a paleneſs tinctured with the color of ruſt. A ſimilar defect of light in the ſun occurred at the time of the next appearance of this comet, A. D. 531, as will be hereafter related. The fact is curious. It is well known that this comet approaches very near to the ſun; but whether the defect of ſplendor in the ſun was the effect of the attractive powers of the comet, or of an alteration in the electrical atmoſphere of theſe bodies; or whether it was occaſioned by an alteration in the terreſtrial atmoſphere, is a queſtion not eaſily ſolved. It might have been owing to a vapor, like that which overſpread Europe in 1783.

This period was marked with famin alſo, with ſhooting ſtars, and numerous prodigies.

See Virgil and Ovid in the paſſages quoted.
See alſo, Zonoras' Annals, lib. 10. Uſher's An. p. 680.

The comet appeared in 44 and alſo the peſtilence—the eruption of Etna in 43 B. C. and therefore ſubſequent to the other events. Indeed it is more generally the caſe, that the volcano does not emit fire until ſome time *after* the appearance of the plague. To this however there are exceptions. Moſt of the great plagues appear two or three years, with different degrees of violence; and during this period, volcanoes diſcharge immenſe quantities of lava.

By a paragraph in Uſher's Annals, p. 684, it appears the winter following the appearance of this comet, was ſevere.

The next peſtilential period commenced in the year 30 B. C. An eruption of Etna, which laid all the neighboring towns in ruins, marked the commencement of this period, which however was preceded in 31 by an earthquake in Judea, in which thouſands of people periſhed in the ruins of their houſes. About the ſame time appeared, ſays Dion Caſſius, " thoſe meteors which the Greeks call comets." Theſe phenomena were followed by a peſtilence in Jeruſalem, which deſtroyed a great part of the nobles and people of the Jews. The ſame period was marked by a great inundation of the Tyber, which ſpread over the low grounds of Rome, and was conſidered as an omen of the future power of Auguſtus.

Dion Caſſius' Univ. Hiſt. 10. 415. Uſher's Annals, 766.

By a curious circumſtance, we learn that a hard winter and peſtilence afflicted Rome at this period. The Emperor Octavius Auguſtus, in his 5th Conſulſhip, B. C. 29, had formed the deſign of reſigning the empire. Horace, the Poet, his friend and flatterer, endeavored to diſſuade him from this purpoſe, on account of the prodigies which happened at the beginning of the year, which was the winter of the year 30 B. C. and correſponds exactly with the appearance of the comet. Among theſe prodigies, the poet enumerates an abundance of ſnow, terrible hail, thunder and lightning, and a deſtructive inundation of the Tyber.

" Jam ſatis terris nivis, atque diræ
Grandinis miſit Pater—&c."

See the 2d Ode of the firſt book, which is worth the notice of the philoſophic reader, on account of the deſcription of the inundation, which proceeded from a *ſwell of the ſea.*

" Vidimus flavum Tiberim, retortis
Littore Etruſco violenter undis."

It is a fact of which there is full evidence, that during the approach of comets, not only tempeſts are more violent, than at other times, but the ocean ſwells without winds—the tides are much higher and high tides are more numerous. The ancients took notice of this fact, and it came under my own obſervation, during the approach of the comet in 1797.

In the 21ſt ode of the ſame book, Horace addreſſes Apollo who " drives war, famin and peſtilence from the Roman people and the Emperor, to the Perſians and Britons."

This paſſage is proof that the Romans found peſtilence in Britain; but the Britons, at that time, had no trade, except with the coaſt of France. How or from what quarter, they *imported the infection*, is left for the ſolution of Dr. Mead's followers.

In the year B. C. 25, according to the Univerſal Hiſtory, a violent peſtilence raged in Rome, an inundation laid a great part of the city under water, lands were left untilled and a famin enſued.

The ſame year, the plague raged in Paleſtine, which was *preceded* by a ſevere drouth and a dearth of corn. A hard winter is mentioned about the ſame time, but the order of this event is not recorded.

Univerſal Hiſt. vol. 13. 502. Uſher's Annals, 772. Dufreſnoy's Chro.

This peſtilence was preceded the year before, by " epidemic diſtempers which proved fatal to many." This fact is important, and will hereafter be found very material in determining the cauſes of epidemic peſtilential diſeaſes. It goes to prove a *progreſſiveneſs* in the peſtilential ſtate of air, or general contagion. And this inſtance, among many to be hereafter ſpecified, demonſtrates that the plague was *not* produced by the famin, according to vulgar opinion in almoſt all caſes of this kind. Had no malignant diſeaſe preceded the plague, and had the plague followed cloſe on the heels of famin, we ſhould have ſtrong ground to believe *famin* to be the *cauſe of the plague;* and a ſeries of ſimilar facts might eſtabliſh that as a principle or law of nature. But it appears, that the malignant diſtempers, which are found to be the conſtant precurſors of peſtilence, were epidemic, in the year *preceding* the famin—a demonſtration that the *general* cauſe, in the ſtate of air, exiſted anterior to the dearth.

SECTION III.

Hiſtorical view of peſtilential epidemics from the Chriſtian era, to the year 1347.

AT the cloſe of the reign of Auguſtus, about the year 14 or according to ſome authors 16 of the Chriſtian era, there was a great famin in Rome, and a comet is mentioned, near the ſame time, by Dion Caſſius. This was followed by a moſt terrible peſtilence in the eaſt, during which twelve cities of Aſia Minor were overthrown by earthquakes. Of theſe calamitous events, the following is the account recorded by Tacitus, An. lib. 2. 47. "Eodem anno, duodecem celebres Aſiæ urbes conlapſæ nocturno motu terræ, quo improviſior graviorque peſtis fuit. Neque ſolitum in tali caſu effugium ſubveniebat in aperta prorumpendi, quia diductis terris hauriebantur : Sediſſe immenſos montes, viſa in arduo quæ plana fuerint, effulſiſſe inter ruinam ignis memorant."

It is a circumſtance not to be overlooked that the plague was prevalent, anterior to this dreadful earthquake, as the hiſtorian remarks that this cataſtrophe rendered the ſickneſs more ſevere and leſs tolerable. Such is the uſual courſe of theſe calamities ; the peſtilence appears, *before* the moſt deſtructive ſhocks of the earth, which rarely fail to occur, during its prevalence. It is to be obſerved alſo that men obtained no ſecurity, in this inſtance, by flying to open places, for the earth opened and ſwallowed them up—fire alſo iſſued from the earth. Large mountains ſubſided to plains, and plains were thrown into mountains.

Tacitus An. lib. 2. 47. Plin. lib. 2. 84. Euſeb. Chron. 201.
Uſher's Annals, 811.

In the year 40 of the Chriſtian era, there was an eruption of Etna, which frightened Caligula out of Sicily and which was followed by univerſal famin in Rome and the eaſt.* This was the famin foretold by Agabus in Acts xi. 28, in the reign of Claudius Ceſar. A peſtilence, at the ſame time raged in Babylonia, and multitudes of Jews, on account of it, withdrew to Seleucia.

Suetonius in Calig. Univ. Hiſt. vol. 14. Uſher's An. 864, 868.

During this famin and peſtilence, a comet was viſible in the year 42.

Short on Air, vol. 2. 170.

The cloſe of the reign of Claudius and the beginning of the reign of Nero, A. D. 53 and 4, were marked by a ſimilar train of phenomena and calamities. A comet is noted by Suetonius and Pliny about the year 54, the year in which Claudius was poiſoned. Tacitus relates that people were alarmed by frequent ſhocks of earthquakes, which demoliſhed many buildings, and great dearth of corn prevailed in Rome and Greece. Pliny records that three ſuns, by which are doubtleſs intended, halos or mock ſuns, appeared the ſame year. Theſe were conſidered by the ancients as prodigies; but tho common phenomena, they are remarkably luminous, and frequent in the periods of peſtilence.

Tacitus Annals, lib. 12. 43. Plin. Nat. Hiſt. lib. 2. 31.
Suet. in Claud. Functius Chronol.

This period was ſickly, tho not recorded as peſtilential. Suetonius remarks, "Ex omnium Magiſtratum generi, plerique mortem obierant." Many of all kinds of public officers died; by which we infer that the year was ſickly.

In the reign of Nero occurred the next peſtilential period. Two comets are noted, one A. D. 62 and a ſecond in 66. In the year 62, Laodicea was overwhelmed by an earthquake. In the year 68, occurred a moſt violent tempeſt in Campania which deſtroyed villages, trees and grain; and a violent earthquake. At the ſame time, raged a mortal plague in Rome, which is ſaid to have carried off 30,000 people; but by the deſcription of its ravages, it is probable the number was much greater. Tacitus remarks that the "houſes were filled with dead bodies and the ſtreets with funerals; neither age nor ſex was exempt; ſlaves and ingenuous plebeians were ſuddenly taken off, amidſt the lamentations of their wives and children, who, while they aſſiſted the ſick, or mourned over the dead, were ſeized with the diſeaſe, and periſhing, were burnt on the ſame funeral pile. To the knights and ſenators, the diſeaſe was leſs mortal, tho theſe alſo ſuffered in the common calamity."

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* Short places this in the 49th year of the Chriſtian era; altho Caligula was killed in the year 41. No dependence can be placed on the *dates* of events, found in Short on Air; and I cannot vouch for their correctneſs, where I have not other authority.

As Rome, at the time under conſideration, contained more than a million of inhabitants, ſo mortal a plague muſt have extinguiſhed a much larger number than 30,000 people—it is not improbable, a numeral or figure has been omitted by the tranſcribers of the original hiſtory.

The earthquakes of this period were experienced in Aſia Minor, at Laodicea and Hierapolis.

Seneca mentions that a flock of 600 ſheep were killed by the peſtiferous vapor, diſcharged during the earthquake in Italy.

Dion Caſſius relates, that at this period, a moſt formidable inundation laid waſte the Egyptian coaſt.

It muſt not be omitted that the violent tempeſt in which St. Paul was ſhipwrecked on the iſland of Melita, now Malta, was in the year 61 or 62, during the approach of the firſt comet.

Tacitus remarks, that no viſible cauſe could be aſſigned for the peſtilence of this period; "Nulla Cœli intemperie quæ occurreret occulis." No remarkable ſeaſon had occurred, to which this diſtemper could be aſcribed. We ſhall find, in ſubſequent periods, diſtinguiſhed writers making ſimilar remarks. The reaſon is, theſe authors did not take a view ſufficiently comprehenſive of the operations of nature; and if the cauſe of plague could not be found, *very near in time and place*, they did not obſerve it. It is true, that an extraordinary ſeaſon does not always precede or attend peſtilence, in a particular place; but by extending our view of the ſubject, to general cauſes, operating over whole quarters of the globe, and perhaps over the whole globe; and conſidering the cauſes, as inviſible, and acting for a ſeries of years, the whole myſtery is unfolded.—Such may be the reſult of this inveſtigation.

For authorities reſpecting the laſt period of peſtilence here noticed, ſee Tacitus, An. lib. 15. 47. lib. 16. 13. Suet. in Nero. Seneca, Nat. Queſt. 6 and 7. Baronuis, vol. 1. 620. Plin. Nat. Hiſt. lib. 2. 83. Uſher's Annals, 892. Funct. Chron. Oroſ. lib. 7. Univerſal Hiſt. vol. 14. 439. Magd. Ec. Hiſt. lib. 2. 13.

Seneca places the great earthquake in Campania under the Conſulſhip of Regulus and Virginius, which, according to common chronology, was in the 65th year of the Chriſtian era.

The next peſtilential period is one of the moſt remarkable in all the circumſtances, that is recorded in Hiſtory.

In the year 79 [ſome authors ſay a year later, but the difference is of no moment, as they agree in the *order* of the events related] juſt before the death of Veſpaſian, appeared a comet with a long coma in the month of June. On the firſt of November following, a moſt tremendous ebullition of fire and lava iſſued from Veſuvius and laid waſte the neighboring country. At the ſame time, happened a violent earthquake, which buried the cities of Herculaneum and Pompeium; and ſo ſudden was the ſhock, that the people, who were attending a play, had not time to quit the theater, and were all buried in a maſs.

This dreadful cataſtrophe was preceded by rumbling noiſes in the earth, and the earth was heated to a great degree. Violent agitations of the ſea, thunder and lightning alſo announced the approach of ſome dreadful event.

The eruption laſted three days, during which time ſuch immenſe quantities of aſhes and ſmoke were diſcharged, that day was turned into night, and the aſhes were driven by different winds to Rome, Syria and Africa.

The agitations of the earth and the elements were tremendous and frighful. Baronius remarks, that ſome perſons ſuppoſed the world would be reduced to chaos, or conſumed with fire. The fiſh in the neighboring ſeas were deſtroyed.

This exploſion of ſubterranean fire was *preceded* by a ſevere drouth in Italy. The next year, 80, was remarkable for a terrible inundation in England; the Severn overflowing a large tract of country, and deſtroying multitudes of cattle.

Theſe violent effects of ſubterranean fire were attended by one of the moſt fatal plagues recorded in hiſtory. A remark of Dion is here very important. He ſays that the "Aſhes from Veſuvius cauſed, at the time, only ſlight indiſpoſitions or diſeaſes; but afterwards produced an Epidemic diſtemper." The remark is incorrect, in aſcribing even ſlight diſeaſes to aſhes; but it leads to a concluſion, which is of moment. The ſlight complaints which prevailed in the autumn of the year of the eruption, compared with modern obſervations, appear to have been the *precurſors* of the plague, which broke out the next year, and as authors aſſert, deſtroyed, for ſome time, 10,000 citizens of Rome in a day.—The ſame year, while the Emperor Titus was viewing the ruins in Campania, a fire broke out in the city, which laid in aſhes a great number of buildings.

The order of the events in this period was, a comet, drouth, ſlight diſeaſes, and an eruption of Veſuvius, with the earthquakes, the firſt year.—In the ſecond, appeared the peſtilence with its moſt malignant effects.

In this eruption of Veſuvius, the firſt recorded in hiſtory, periſhed the elder Pliny; and the Emperor Titus fell a victim to his paternal care of his ſubjects.

Suetonius, 23. Aurel. Victor. Epit. Dion Caſſius. Pliny Epiſ.
Baronius An. vol. 1. 713. Magd. lib. 2. 14.

In the year 90 appeared a comet. The plague is ſaid to have appeared in the north of England in 88, and in 92, to have deſtroyed 150,000 lives in Scotland.

Short, vol. 2. 207.

In 102 a plague is ſaid to have ariſen from dead fiſh driven on ſhore, but I have no other particulars.

In the year 107 four cities of Aſia, two in Greece and three in Galatia, were overwhelmed by an earthquake. A comet is mentioned by Short in 109, but as I have not found the original authority, I cannot depend on the accuracy of the chronology. It is probable that theſe phenomena occurred within the ſame year; and there is the more reaſon to believe this, as different and reſpectable authors differ two or three years in the chronology of Roman hiſtory. The next event to be related, is a remarkable inſtance of the truth of this obſervation.

Short mentions a plague in Wales in 114 which deſtroyed 45,000 lives; but I have not the hiſtory of the facts.

In the reign of Trajan, the city of Antioch was almoſt totally demoliſhed by an earthquake. This emperor was in the city at the time, and narrowly eſcaped with his life. Some authors place this event in the year 114; others in 115; but Baronius has proved by an ancient inſcription, that it happened under the conſulate of P. Vipſtanus Meſſala and M. Virgilianus Pedo; which brings the event to the year 117. A comet was viſible the ſame year.

The earthquakes of this period were extremely violent—many cities were overthrown, mountains ſunk, rivers were dried up and new fountains appeared.

Aurelius Victor adds to theſe calamities a great inundation of the Tyber, violent peſtilence and famin; but to which of the periods, the year 107 or 117, he alludes, is not quite certain, tho probably to the latter. "Terræ motus gravis per provincias multas, atroxque peſtilentia, fameſque et inundia facta ſunt."

To remedy the danger from fire and earthquakes, Trajan limited the height of houſes in Rome to 60 feet; and for that regulation obtained the title of "Father of the Country."

The great earthquake at Antioch was accompanied with fierce winds, a circumſtance not very common; it being more uſual that ſhocks of the earth happen during a perfect ſerenity and tranquillity of the atmoſphere, unleſs in the vicinity of volcanoes.

Aurel. Victor. Epit. Trajan. Dion Caſſius.
Baronius vol. 2. 55. Echard's Rom. Hiſt. vol. 2. 276.

During the time that Trajan was making war on the Agarini, a people of Arabia, which had revolted from the Roman government, flies in myriads appeared and covered every veſſel and utenſil, ſo that the Emperor was compelled to abandon the expedition. This was near the time of the earthquake which deſtroyed Antioch.

Baron. 2. 54. Magd. Cent. 2. 13.

This fact ought not to be omitted; as the generation of innumerable inſects is one of the phenomena which generally attend a great peſtilence—The ſame ſeaſon was marked by terrible ſtorms of wind, rain and hail-ſtones of unuſual ſize. The winter ſucceeding that in which Antioch was deſtroyed, was ſo tempeſtuous, and the Tigris ſo ſwelled by deluges of rain, that Trajan's army ſuffered extreme hardſhips and great loſſes, in his expedition into Aſſyria.

Under the year 115, I find mentioned a ſudden and violent inundation of the Severn in England, which drowned people in their beds, and deſtroyed 5000 head of cattle. Perhaps philoſophy will place this event, under the year of the earthquake at Antioch; whichever may be the true year, 115 or 117.

In the chronological tables, a great earthquake in China is mentioned under the year 114—the year of the plague in Wales.

Under the Emperor Adrian, ſay the compilers of the Magdeburgh hiſtory, from Euſebius, the greateſt part of Nicomedia and Nicea was overthrown by earthquakes; and not long after, Nicopolis and Ceſarea were totally overwhelmed. Functius aſſigns the fate of Nicomedia to the year 121, and that of Nicopolis to 129. By another writer is noted a comet in 127, and a plague in Scotland.

Short, vol. 2. 207.

In 137 appeared a comet, followed by the plague.—In this year or the ſubſequent one, the Thames was almoſt dry.

The plague again made great havoc in Scotland in 146.—An eruption of fire from Lipari happened in 144.

In the year 153 happened a ſevere winter of three months, which covered the Thames and all rivers with ice.

In the reign of Antoninus Pius, A. D. 154, occurred an earthquake which proſtrated ſome towns in Aſia and Rhodes. A comet appeared nearly at the ſame time, and a peſtilence in Arabia, together with an inundation of the Tyber.

Julius Capitolinus. Magdeb. Cent. 2. 13. Baronius vol. 2. 130.

Of the general and fatal peſtilence in the reign of Marcus Aurelius Antoninus and Lucius Verus, we have many accounts. It appeared in Rome in 167, but its origin was in Aſia, a year or two earlier. Ammianus Marcellinus, the philoſophic ſoldier, relates that this plague originated from the foul air of a ſmall box or cheſt, which a Roman ſoldier had opened, in ſearch of plunder, after the taking of Seleucia. Julius Capitolinus mentions the ſame fact on the authority of mere vulgar report or tradition. " Et nata *fertur* peſtilentia in Babylonia, ubi de templo Apollonis ex arcula aurea, quam milis forte inciderat, ſpiritus peſtilens evaſit, atque inde Parthos orbemque compleſſe."

A. Marcellinus gives a more particular account of this event. " Milites fanum ſcrutantes, invenere foramen anguſtum, quo reſerato, ut pretioſum aliquid invenirent, ex adyto quodam concluſo a Chaldœorum arcanis, labes primordalis exſilivit, quæ inſanabilium vi concepta morborum, ejuſdem Veri et Marci Antonini temporibus, ab ipſis Perſarum finibus, aduſque Rhenum, et Gallias Cuneta contagiis polluebat et mortibus."

That a cloſe box or other confined place, which might have been ſhut for ages, ſhould contain a peſtiferous vapor which might deſtroy the life of the man that firſt opened it, is not only poſſible, but very probable. But that this trifling quantity of noxious air ſhould be ſufficient to generate a univerſal peſtilence from the confines of Perſia to Gaul, is a vulgar notion, preciſely reſembling the modern opinion that the plague is conveyed from country to country, in bales of goods.

The hiſtorian adds, that the Emperor returned to Rome, and " luem ſecum deferre videreter," ſeemed to carry the plague with him. But the Romans paſſed only from Seleucia to Rome; whereas the plague raged over the whole earth; ſo that the diſeaſe muſt have originated in other countries, through which the Emperor did *not* paſs, and from other cauſes than the noxious air of a little box. It raged in Gaul and in Scotland.

By attending to the phenomena of the phyſical world, during this period, we ſhall find cauſes fully adequate to the effect, without reſorting to the temple of Apollo in Seleucia. The ſtate of the elements was deranged, and nature was every where agitated. An inundation of the Tyber at Rome laid all the low grounds, and a part of the city under water, ſweeping away people, buildings and cattle, and deſolating the fields. Famin and earthquakes marked the ſame period. The air became inſalubrious, and myriads of caterpillars and other inſects overran the earth and devoured vegetation.

The peſtilence was violent and mortal, correſponding with theſe ſymptoms of derangement in the elements. In Rome, at one time, it is related, that the mortality extended to ten thouſand perſons in a day. Its preciſe duration, I do not find to be ſpecified by the hiſtorians; but it continued for a number of years; in the midſt of which appeared a comet, about the year 169.

See Am. Marcellinus, lib. 23, and Julius Capitolinus, in Vero. Aug. Hiſt. 580. Hiſt. of Emperors by Pedro Mexiæ, p. 172. Echard's Rom. Hiſt. vol. 2. 315 to 322, who is more correct than Gibbon.

Of the ſymptoms of this deſolating plague, I find no account, except that the patients had a light fever, and a gangrene appeared on the extremities of the feet.

It is proper here to notice a paſſage in Gibbon's Hiſt. vol. 1. chap. 3, which deſcribes, as halcyon days, the period of the world in which this calamity occurred. The following are his words. "If a man were called upon to fix the period in the hiſtory of the world, during which the condition of the human race was *moſt happy* and *proſperous*, he would, without heſitation, name that which elapſed from the death of Domitian to the acceſſion of Commodus;" that is, from the year 96 to 180.

It is certain that, at this time, the Roman Empire was in its glory, and governed by a ſeries of able and virtuous princes, who made the happineſs of their ſubjects their principal object. But the coloring given to the happineſs of this period, is far too brilliant. The ſucceſs of armies and the extent of empire do not conſtitute excluſively the happineſs of nations; and no hiſtorian has a title to the character of fidelity, who does not comprehend, in his general deſcriptions of the ſtate of mankind, moral and phyſical, as well as political, evils.

During the period mentioned by Gibbon, not only Antioch, with the loſs of moſt of its inhabitants, amounting probably to more than 100,000, but thirteen other cities were demoliſhed by earthquakes. In the famous revolt of the Jews under Trajan, hiſtorians relate that 450,000 Romans were maſſacred in Syria, Cyprus and other countries; and in the wars undertaken by Adrian to ſubdue them, it is eſtimated that 50 cities and 985 towns were deſtroyed, and 580,000 men loſt their lives by famin, diſeaſe and the ſword. The reign of the Antonines was diſtinguiſhed for multifarious and ſevere calamities. The deſcription of them, by Aurelius Victor, ought to be given in his own words. Speaking of the Emperor M. Antonine, he ſays, "Niſi ad illa tempora natus eſſet, profecto quaſi uno lapſu ruiſſent omnia ſtatus Romani. Quippe ab armis nuſquam quies erat: perque omnem orientem, Illyricum, Italiam, Galliamque bella fervebant. Terræ motus non ſine interitu civitatum, inundationes fluminum, lues crebræ, locuſtarum ſpecies agris infeſtæ, prorſus ut prope nihil, quo ſummis angoribus atteri mortales ſolent, dici ſeu cogitari queat, quod non illo imperante ſævierit."

Epit. of the lives of the Emperors.

"Unleſs he, M. Antonine, had been born at that juncture, the affairs of the empire would have fallen into ſpeedy ruin: for there was no reſpite from military operations. War raged in the eaſt, in Illyricum, in Italy and in Gaul. Earthquakes, with the deſtruction of cities, inundations of rivers, frequent plagues, a ſpecies of locuſts ravaging the fields; in ſhort every calamity that can be conceived to afflict and torment men, ſcourged the human race, during his adminiſtration."

How can that be a "happy and proſperous condition of men," in which they were ſubject to continual wars, to maſſacres, to the ravages of inſects, and to a ſeries of plagues, which deſtroyed probably one fourth of the inhabitants of the globe; and when the Roman empire was upon the brink of ruin? And how can a writer be eſteemed as a hiſtorian, who ſubſtitutes the flowers of rhetoric for ſober truth, and ſarifices fact to embelliſhment?

In the year 173 a peſtilence raged in the Roman armies, which threatened them with extermination.—This appears to have been a continuation of the plague before deſcribed. It prevailed in Rome in 175 and 178.

Funct. Chronol. Short, vol. 2.

A ſevere winter in 173 produced famin in England, where the ſnow covered the earth for 13 weeks.

In 181 a comet was viſible, and in 182 Smyrna was almoſt ruined by an earthquake. The plague prevailed in Rome in 183.

Ibid.

In the reign of Commodus, about the year 187, Rome was again afflicted with a ſevere plague, which was felt alſo in all parts of Italy, tho with leſs mortality than in the city. Herodian, lib. 1, gives the following account of it. "A great peſtilence raged throughout Italy at that time, but with moſt violence in the city, by reaſon of the great concourſe of people aſſembled from all parts of the earth. The mortality among men and cattle was great. The Emperor, by advice of certain phyſicians retired to Laurentum, on account of the coolneſs of the place which was ſhaded with laurels, from which circumſtance it derived its name. It was ſuppoſed alſo the effluvia from the laurels acted as an antidote againſt the contagion of the diſtemper. The people in the city alſo, by advice of phyſicians, filled their noſes and ears with ſweet ointments, and conſtantly uſed perfumes, for in popular opinion, they occupy the paſſages of the ſenſes, with theſe odors, and ſhut out the corrupt air; or if they do not wholly exclude it, they overpower its influence by ſuperior force. But theſe things did not check the progreſs of the diſeaſe, and men and cattle continued to periſh."

The deaths amounted, in Rome, to 5000 in a day, for a conſiderable time. A famin prevailed at the ſame time, and hiſtorians aſcribe it to Cleander, the miniſter of Commodus, who had monopolized the corn, to compel people to purchaſe of him at an advanced price. Dion Caſſius however ſays, the year had been unfruitful. The peſtilence continued three years. Indeed we may here remark once for all, that when we read of a plague of great extent and violence in any part of the world, under the date of a particular year, we may always conſider that or other peſtilential diſeaſes, as prevailing at leaſt three years. Rarely are great plagues of leſs duration, but often of greater. Hiſtorians ſeldom mention the peſtilence, except in the year of its greateſt violence, but no plague, I will aſſert, ever yet infeſted a particular city or country, without precurſors of a very malignant type. When therefore we ſpeak of peſtilence, as prevailing in a particular year, we are to conſider the epidemic as extending to a period of three, four or five years, perhaps to a much longer period, either in the form of plague, a deadly petechial fever, or other fatal diſeaſe.

In the foregoing deſcription of the diſeaſe under Commodus, we notice the vulgar modes of guarding againſt contagion, by ſtuffing the noſe and ears with aromatics—a practice that in part ſubſiſts at this day, altho conſtant experience proves it to be utterly ineffectual.

It appears from Herodian that a comet appeared at this period, or other ſingular heavenly phenomena. He ſays, "Ea tempeſtate ſtellæ per diem perpetuo apparuerant, quædamque ex iis in longum productæ medio quaſi aere ſuſpenſæ videbantur." Comets are ſometimes viſible in the day time, and it is well known that many of the ancients conſidered them as meteors, floating in the earth's atmoſphere, as we ſee in Ariſtotle, Seneca and Pliny, who have diſcuſſed and refuted thoſe opinions. See alſo Sampridius who mentions the comet and unuſual darkneſs, at this period.

Another circumſtance mentioned by Herodian deſerves notice. He ſays, that animals at this time grew out of their uſual ſize, aſſuming an extraordinary figure and diſproportioned in their parts. "Preterea animalia, genus omne, minime ſuam naturam ſervantia, cum figura corporis prodigioſa, tum membris haudquaquam congruentibus edebantur." This fact the writer arranges under the head of *prodigies;* but numerous modern obſervations confirm the veracity of the hiſtorian. In many plagues, to be hereafter mentioned, myriads of unuſual animals have appeared, and many common animals and inſects have grown to an unuſual ſize. With this fact almoſt invariably attending peſtilence, and before the eyes of every man of ſcience in well atteſted accounts; a fact that demonſtrates a prodigiouſly peſtilential ſtate of the elements, modern philoſophers, phyſicians and rulers have been tracing all the plagues of the earth to one or two little ſpots in Egypt and the Levant—This circumſtance is hardly credible; yet is true, and indicates a lamentable decline of ſound philoſophy.

A ſlight ſhock of an earthquake is mentioned incidentally by Herodian, after the plague. Speaking of the burning of a temple in Rome, he ſays " there had been no ſtorm or clouds, but a ſmall earthquake preceded the conflagration :" and he inſinuates that the building might have been ſet on fire by a flaſh of lightning in the night, or by an eruption of fire in the earthquake.

In 193, Canterbury in England was ſeverely ſhaken by an earthquake.

The plague prevailed in London in 211, and a comet appeared in the ſame year. In 214, there was a moſt dreadful inundation of the river Trent in England, which ſpread over 20 miles of country, and deſtroyed many lives. Here is probably a miſtake in chronology of at leaſt two years—or rather a difference between different authorities. Euſebius, the learned Biſhop of Cæſaria, places the birth of Chriſt two years earlier, than the common or Dionyſian Chronology. Many authors follow one mode of computing time and many the other ; and without the original authors, and a cloſe attention to their modes of reckoning time, it is not poſſible to reconcile theſe differences. The uniform influence of comets in producing violent tempeſts and unuſual ſwelling of the ocean, within a year of their appearance and after their departure, may aſſiſt in correcting ancient chronology.

In the year 218 two comets appeared, and a ſevere froſt of five months is related to have happened in England in 220.

There was a great inundation of the Tweed in 218, and a peſtilence in Scotland in 222 which deſtroyed 100,000 lives.

In 235 a comet is noted, but I find no other phenomena mentioned about this time, except a great death of fiſh in 231, multitudes of which were waſhed aſhore on Britain ; and an earthquake in Wales in 232.

In the reign of the Emperor Gordian, about the year 243, the earth was agitated by moſt violent earthquakes ; and in 245 there was a prodigious inundation of the ſea in Lincolnſhire, England, which laid under water many thouſand acres of land, which are ſaid not yet to be recovered. A ſevere winter is mentioned in 242.

We have now arrived to one of the moſt calamitous periods recorded in hiſtory—a period of mortal plagues, which commenced about the year 250, or 252 in the reign of the Emperor Decius and continued fifteen or twenty years, through the adminiſtration of Gallus and Voluſian, Valerian and Gallienus. This period was uſhered in by a comet in 250, the winter of which in England was ſo ſevere, that the Thames was frozen for nine weeks.—An eruption of Etna is noted under the year 253, and an earthquake in Cornwall in 251.

The plague appears to have been moſt fatal in Rome at two different times, during this period; viz. in the years 252 and 262 or 3, including the year preceding and ſucceeding each of theſe periods. It reached the northern parts of Europe, and in 266, Scotland had ſcarcely living people enough to bury the dead.

It firſt appeared in Ethiopia, on the confines of Egypt, and ſpread over all the provinces of the Roman Empire, which, ſays Zonoras, were exceſſively exhauſted by its deſtructive ravages. Zoſimus, after deſcribing the devaſtation occaſioned by the irruption of the Scythians, ſays “Lues etiam peſtilens in *oppidis* atque *vicis* ſubſecuta, quicquid erat humani generis reliquum, abſumpſit.” The plague in *towns* and *villages* followed the Scythians and devoured that part of the human race which the barbarians had ſpared.

Jornandes ſays, the peſtilence “faciem totius orbis fœdavit”—deſolated or disfigured the face of the whole earth.—In the reign of Gallienus, 5000 citizens of Rome periſhed daily, in 262, or the following year, a portion of this period moſt diſtinguiſhed for convulſions of the earth.

This latter period was marked by deſtructive earthquakes in Rome, Syria and other countries. In ſome places the earth opened and ſalt water iſſued. Trebellius Pollio ſays, “Frightful earthquakes ſhook Italy, Aſia and Africa. For many days, [ſome authors ſay, *three* days] there was an unuſual or preternatural darkneſs and a hollow rumbling noiſe in the earth, which opened in many places. Many cities in Aſia were overwhelmed, and others loſt in the ocean. Peſtilence *followed* and deſolated the Roman Empire."

In the Univerſal Hiſtory, it is ſaid that this plague ravaged Capadocia and all Aſia Minor, and was followed by famin, earthquakes and a great comet or meteor.

Oroſius remarks that "Nulla fere provincia Romana, nulla civitas, nulla domus fuit, quæ non illa generali peſtilentia correpta atque vaſtata." Scarcely was there a province of the Empire, a city or a houſe, which was not attacked and deſolated.

This paſſage is worthy of notice, for it will hereafter appear, that altho the plague is uſually limited to cities, where powerful artificial or local cauſes aid the general contagion, yet in ſome inſtances, the general ſtate of the atmoſphere has been ſo peſtilential, as to produce *plague* on the moſt elevated hills and ſalubrious places, in detached villages and houſes, without the leaſt communication with the ſick and infected.

Gibbon chap. 10, has calculated that "a moiety of the human ſpecies" fell a prey to this frightful epidemic.

Cedrenus page 211 ſays this diſeaſe began in autumn and ended at the riſing of the dog-ſtar; or beginning of Auguſt.

The ſtate of the air, during this peſtilence, was uncommonly impure. The deſcription of it by Euſebius, in a philoſophical view, deſerves notice. "Quando, inquit, aer iſte pravis undique evaporationibus turbatus, ſerenus reddetur? Tales enim ex terra fumigationibus, e mari venti, e fluminibus auræ, e portubus exhalationes ſpirant, ut veluti ros quidam tabidus e cadaveribus putridis, cunctis ſubjacientibus elementis inferatur."

Magdeburgh. Cent. 3. p. 31.

This is a remarkable inſtance of a ſtate of air ſo highly corrupt, as to form on objects a mould or coat, like a turbid dew, from dead bodies ros tabidus—a ſtate of air which the author aſcribes to vapor from the rivers and the earth.—The account is analogous to what is related of other peſtilential periods, and the fact denotes an utter derangement in the healthful qualities of air and water.—Cedrenus compares this dew to the gore of dead perſons. "Ros ſaniei mortuorum ſimilis apparebat."

Page 211.

In the Traitè de la Peſte, I find the following deſcription of the ſymptoms of this malady, from St. Cyprian—dejection of mind, exhauſtion of ſtrength, inceſſant involuntary evacuations, as in certain paraliſes, violent fever of the bowels, mouth inflamed, ſtomach ſwelled, eyes ſparkling. The diſeaſe deſtroyed the feet, the hands, the ſight, the hearing and organs of generation.

Aurelius Victor ſays of this plague "Simulque Romam peſtilentia graſſabatur, quæ ſæpe curis gravioribus atque animi deſperatione oritur." The plague ſpread, which often ariſes from the more diſtreſſing cares and deſpair. This deſcribes the miſerable ſtate of mankind, at that period; but anxiety and deſpair do not produce the plague, except during the prevalence of a peſtilential ſtate of air. There muſt be a ſtrong prediſpoſition in the body, or an imbecillity in the powers of animal life previouſly induced; or the utmoſt preſſure of grief will never occaſion a plague. But at the time when general cauſes have impaired the vigor of the animal principles, ſlight cauſes will often induce fever and deſtroy life. The practical inferences from this fact are extremely important to mankind.

The articles in this account of peſtilence which deſerve particular notice, are the introduction of the period by a comet and an eruption of Etna—the agitations of the earth by ſubterranean fire—the preternatural darkneſs of three days, a phenomenon not unuſual at ſuch times and eaſily accounted for, on the ſuppoſition of the extrication of a great quantity of ſubterranean vapor—the peſtiferous ſtate of air which covered objects with mould and corruption—and which generated plague in every village and almoſt every houſe.

See Zoſimus in Gall. lib. 1. ſec 26. 37, 46. Zonoras lib. 12. Trebellius Pollio in Gall. Jornandes. Hiſt. Auguſt. 1098. Eliop. lib. 9. Baron. vol. 2. 496. Aurel. Victor. Epit. Magdeburgh. Cent. 3. 31.

Near the cloſe of this period, about the year 272, there was an eruption of Veſuvius. At the ſame time, a ſevere famin raged in England. Five or ſix years later, a ſevere famin prevailed over the world. "Fames ingens per totum orbem graſſata eſt."

Zoſimus.

It is proper here to notice an inaccuracy of the celebrated Newton, in his Diſſertations on the prophecies, on the 6th chapter of Revelations, in which he ſays, " In the reign of Probus alſo there was a great famin throughout the world—an uſual *conſequence* of famin is peſtilence.—This peſtilence according to Zonoras, ariſing from Ethiopia, while Gallus and Voluſian were Emperors, pervaded all the Roman provinces for fifteen years." But Probus began to reign in the year 276, whereas the peſtilence broke out in Ethiopia under Decius or Gallus and Voluſian, about A. D. 252 according to Zonoras, but according to other authors, two or three years earlier. Therefore the peſtilence under Gallus, could not be a *conſequence* of a famin under Probus, which was 25 years later than the plague aſcribed to it. Theſe remarks are neceſſary to correct that paſſage of Newton, and they are uſeful in correcting the common notion, that the plague is uſually occaſioned by famin. The idea is probably unphiloſophical; but is certainly contrary to fact. Famin often *goes before* the plague, and as often *follows* it. But ſome of the moſt diſaſtrous periods of the plague, have originated during the *greateſt abundance* of proviſions.—Such was the fact in England, in 448, and in 1347, as will be hereafter related. The great error of hiſtorians and phyſicians has been, that obſerving famin and peſtilence often cotemporary, and the cauſe of the plague not being obvious to the ſenſes, they have taken famin to be the cauſe. Whereas it will appear on careful inveſtigation, that famin is an *effect* of the ſame cauſe which produces the plague among men. The dearth of proviſions, during this formidable epidemic, is the effect of a *peſtilence in vegetation* ; that is, a failure in the principles of vegetable life, which proceeds from the ſame derangement of the ſeaſons, or defect in the properties of air and water, which cauſes the plague among men.—Famin often augments peſtilence, and modifies the ſymptoms of the diſeaſe ; but in a healthy ſtate of the elements of life, air and water, famin will not produce the plague. This may be demonſtrated by multiplied inſtances of ſeamen, ſtarving on the ocean, who often periſh by hunger, without diſeaſe, or if they had diſeaſes in conſequence of mere hunger, nothing like the plague has ever been of the number.

I cannot help noticing alſo the obſervations of Mr. Gibbon on the calamities of this period. He ſays, " Our habits of thinking ſo fondly connect the order of the univerſe with the fate of man, that this gloomy period of hiſtory has been *decorated* with inundations, earthquakes, uncommon meteors, preternatural darkneſs, and a crowd of prodigies *fictitious* or *exaggerated*."

See vol. 1. ch. 10.

If the original writers who have related the facts above mentioned, had been as fond of *decorations*, as this author, we might well have diſtruſted their accounts of unuſual occurrences. Had this *elegant* writer taken due pains to inform himſelf of the truth, before he had indulged ſuch reflections on the moſt credible hiſtorians, he would have found ſimilar phenomena to have attended the ſame calamity, peſtilence, in every age from that period to the preſent, and many of them if not all, during his own life, if not within his own obſervation.

He goes on to obſerve that " famin is almoſt always followed by epidemical diſeaſes." This point will be afterwards conſidered.

He ſays alſo that the plague at this period " raged from 250 to 265, *without interruption*, in every province, *every city* and almoſt *every family* of the Roman Empire."

The words *without interruption*, were probably inſerted for the ſake of *decoration*. They are not authorized by the original writers ; and cannot poſſibly be true, for an uninterrupted plague in a city or country, would ſoon leave it without an inhabitant. The truth is, it ſeldom raged, more than ſix or eight months, in the ſame place, at one time. It ſeized this town, one year, and that, the next, as we obſerve in modern times, through the whole period.*

The more I examin the original writers, from whom Gibbon derived his materials, the leſs confidence I place in his repreſentations of events. He appears to be a partial hiſtorian and a ſuperficial philoſopher.

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* The words of Zonoras, per quindecem continuos annos, are to be underſtood as above explained.

In 280 a comet, and in 282 an earthquake in England.

In the year 289 was viſible a large comet, and in 290 the winter in England was very ſevere, all the rivers being cloſed for ſix weeks. Buſiris and Coptis, two cities of Egypt, were overthrown by an earthquake. In 292 famin, peſtilence and drouth prevailed—the bodies of men were covered with carbuncles and ulcers.

Cedrenus.

Worceſter in England was almoſt ruined by an earthquake in 287.

Short, vol. 2.

In 298 alſo appeared a comet and earthquakes ſoon followed, which in Syria, deſtroyed ſeveral thouſand lives.

Magdeburgh, Cent. 4. p. 1434.

Earthquakes were experienced in Conſtantinople in 309 & 310.

In the year 311, the uſual rains of winter failed in Italy, famin followed and then peſtilence. Baronius, vol. 3. p. 69, deſcribes it as a new diſeaſe of *foreign* origin, which, in conſequence of exceſſive heat, produced the anthrax or carbuncle over the whole body, which expoſed the patient to mortification. It fell upon the eyes with great ſeverity, rendered many perſons blind, and deſtroyed the lives of great multitudes of all ages. The reader will remark that this diſtemper was not of *domeſtic* origin! This is a ſtale cuſtom of aſcribing all evils to foreign ſources.

It is related that Cyprus, about this period, ſuffered a drouth of thirty-ſix years in conſequence of which it was nearly diſpeopled.

Under the chronological tables, I find a famin mentioned to have deſtroyed in England and Wales, forty thouſand lives in the year 310; and in the following year a violent earthquake injured London.

A comet is noted in 321, and a univerſal famin in Britain in 325.

In the year 335, appeared a comet of great magnitude, and as it was about two years before the death of Conſtantine the Great, ſuperſtition held it to be the omen of that event.

In 336 Syria and Celicia were laid waſte by peſtilential diſeaſes. There was an inundation of the Tweed, the ſame year.

Etrop. lib. 10. Oroſius, lib 7. Magdeb. Cent. 4. 1442.

[illegible] have not found any particular account of the duration or extent of this calamity. But it appears that this period, like that in the time of Thucydides, was followed by moſt deſtructive earthquakes in 340, which overwhelmed or injured many cities of the eaſt. A comet marked this period in 339.

Baron vol. 3, p. 536.

A ſnow of 15 feet depth in England is recorded under the year 341.

In 358 happened a moſt tremendous ſhock of an earthquake, which buried in ruins the greateſt part of Nicomedia. The ſhock happened ſoon after day-break in the morning, 11th Kal. Sept. and was preceded by a collection of vapor or clouds, that covered the city with impenetrable darkneſs, ſo that the eye could not diſcern the neareſt objects. This was ſoon ſucceeded by flaſhes of lightning and moſt violent winds and tornadoes, which carried buildings to the adjacent hills. The ſcene was cloſed by a ſhock of the earth which demoliſhed a large portion of the city.

Authors relate that this earthquake levelled 150 cities.

Short indeed was the reſpite which Aſia Minor enjoyed. In 362, the remains of Nicomedia were deſtroyed, part of Nice was overturned, Jeruſalem was ſhaken and other parts of the world did not eſcape. This was the year alſo in which Julian attempted to rebuild Jeruſalem, when fire burſting from the earth, deſtroyed the works and rendered the place inacceſſible. This event has been aſcribed to a preternatural influence ; but is a common phenomenon in Italy, Aſia Minor, and in all countries ſubject to earthquakes ; and as it happened when the neighboring countries were laid waſte by the exploſion of ſubterranean fire, there is no neceſſity for reſorting to ſupernatural cauſes, to account for the phenomenon.

During theſe agitations of the earth, the ſea receding left its bed, a highway for paſſengers. Inundations ſucceeded, and drouth, famin and peſtilence walked in the train of public calamities.

In the following years, the earthquakes were repeated and Baronius aſſerts that the whole world was ſhaken ; the ſhores of the ſea were in ſome places changed ; ſome places ſunk, and in others the waters roſe and carried veſſels over the tops of houſes. Authors place the deſtruction of Nice in 367, and of other cities in 368 or 372.

The deſtruction of Nicomedia was preceded by a ſevere drouth—a common event, that a violent exploſion of fire from the bowels of the earth, is preceded, ſome weeks or months, by a total exhauſtion of water by evaporation.

In the midſt of theſe convulſions, appeared a comet in 363 or 4, and a meteor or globe of fire in 363.

A hard winter of 14 weeks duration in England is mentioned under the year 359, the year following the deſtruction of Nicomedia, and the ſevere drouth. This is a uſual event. A ſingular light of great extent appeared in the heavens, in the year preceeding.

The whole reign of Conſtantius was diſtinguiſhed for deſtructive earthquakes, and the early writers of eccleſiaſtical hiſtory " make no doubt that God, by theſe judgments, manifeſted his diſpleaſure at the prevalence of the Arian blaſphemies." A dreadful famin cloſed this period.

It was during the early part of this period, in 359, that the plague broke out in Amida, a city of Perſia, when beſieged by Sapor, and from which, when taken, Am. Marcellinus very narrowly eſcaped.

See Baron. vol. 4. 121, 188, 209 ; vol. 3. 776. Am. Marcel.
lib. 22 and 25. P. Mexia Hiſt. Emp. p. 339. Eutrop. lib. 11.
Niceph. lib. 9 and 10. Magdeb. Cent. 4. c. 13. Ech. Rom.
Hiſt. vol. 3. 116. Aurelius Victor, Epit. Julian.

Juſt before the death of Valentinian I. appeared a comet, in the year 375. Zoſimus mentions a hard winter at that time, extending to an unuſual length. Another author mentions a ſevere drouth about the ſame time. Crete, Peloponneſus and Greece in general were agitated by earthquakes and ſome towns were demoliſhed.* In Wales 43,000 died of the plague.

Echard's Rom. Hiſt. vol. 3. 156. Zoſimus lib. 4.
Magdeburgh Cent. 4. ca. 13. Am. Marcel.

* Gibbon chap. 26 has well deſcribed the earthquakes of 365, but

The following year was marked with famin, and univerſal peſtilence among men and cattle. So ſevere was the famin in Phrygia that the inhabitants abandoned the country.

Baron. vol. 4. 380.

A comet appeared in 383, and the plague raged in Rome and in Syria in 383 and 4.—This ſtar however is deſcribed by Nicephorus and others, as of a ſingular figure, reſembling a burning column ; its motions differed from thoſe of other ſtars—it was viſible 30 days.

Niceph. lib. 12. Magdeb. Cent. 4. ca. 13.

About the ſame time, the Nile roſe to ſuch an alarming height as to threaten Alexandria and Lybia with an inundation.

Sozomen, lib. 7. 20. Magd. Ibm.

Juſt before the death of Theodoſius, about the year 394 or 5, happened dreadful earthquakes, ſtorms, rain and unuſual darkneſs.

The appearance of the fiery column and the inundation are placed by ſome authors under the year 394. The Magdeburgh Hiſtory from Proſper's Chronicon, places it under the ſixth year of Gratian, which is alledged to be the year of Chriſt 393. But Gratian was killed about the year 383. There is therefore a miſtake as to the era of this phenomenon, which, as deſcribed by authors of credit, was one of the moſt ſingular that was ever exhibited to the people of this globe.

Niceph. lib. 12. 37. Magd. vol. 2. 1452 and 5.

About this period, ſwarms of locuſts covered the land of Judea ; and being driven by the winds into the ſea and waſhed on the ſhore of Paleſtine, by Gaza, Aſcalon and Azotus, they filled the atmoſphere with a fetid effluvia, which occaſioned peſtilence among men and cattle.

Magdeburgh from Hieronymus, vol. 2. p. 1455.

In 396 Conſtantinople ſuſtained a violent ſhock of an earthquake, during which the heavens appeared to be in a flame. Functius places theſe events under the year 400, and he is probably correct.

Baron. vol 4. 20. P. Diac. lib. 13.

by miſtake quotes Zoſimus lib. 4. p. 221 ; whereas the latter author, in this paſſage, deſcribes the earthquakes of 375.

We are now arrived at another ſingular and diſtreſſing period of the hiſtory of man. In the year 400, under the adminiſtration of Arcadius and Honorius, a comet appeared of a prodigious ſize and horrible aſpect. Its immenſe coma ſeemed to ſweep the earth, and Baronius, the pious author of Eccleſiaſtical Annals, remarks, that many of the Gentiles were terrified into chriſtian baptiſm and converſion.

During its approach or appearance, happened one of the moſt ſevere winters on record. The Euxine Sea was covered with ice for 20 days. A drouth is mentioned under the ſame period, which was ſo ſevere that the heavens were like braſs. Unfortunately hiſtorians have often neglected to arrange theſe phenomena in due order, throwing them into a general deſcription.

The ſame period was marked by deluges of rain, and from the order of narration, it appears that the rains *preceded* the hard winter of the year 400. The rivers were ſo ſwelled as to prevent the imperial generals from paſſing into the eaſt to attack Sardis.—Severe earthquakes occurred in the ſame year.

About the year 407 or 8, near the cloſe of the reign of Arcadius, a celeſtial phenomenon of a ſingular ſpecies preſented itſelf to the view of an aſtoniſhed world. It was called a comet, but did not reſemble one of the ordinary figure. It reſembled a cone or pillar, but had not the appearance of a ſtar, ſo much as of the flame of a lamp. Its motion was not regular—it began to move from the point of the heavens where the ſun riſes at the equinoxes, and paſſing the tail of Urſa, proceeded to the weſt.

It meaſured the heavens—its vertex, at ſome times, extended to a great length; at others, was contracted into the figure of a cone. After being viſible for four months, it diſappeared. This is the deſcription of it, nearly in the words of Nicephorus. Meteors were obſerved at the ſame period.

Accompanying and following theſe phenomena, were ſome of the moſt diſtreſſing calamities. Violent earthquakes levelled cities—inundations of rivers and the ſea, followed by intolerable cold ſtorms of hail, and a drouth that blaſted vegetation, by which means multitudes of people periſhed. Peſtilence raged in every quarter, and famin ſo ſevere, that the populace demanded that human fleſh ſhould be ſold in market. Paleſtine was devoured by locuſts.

Nicephorus has employed a chapter to deſcribe the phyſical evils, and the miſeries of man, in this ſingular period. He declares that almoſt all Europe periſhed.—"paſa de ōleto ē Eurōpē." and no ſmall part of Aſia and Africa.

Niceph. lib. 13. ca. 6 and 36. Baron. vol. 5. 20, 114, 176, 294.
Zoſimus lib. 5. Magd. Cent. 5. ca. 13. Ech. vol 3. 254.

In 418 appeared a comet; in 419 ſeveral cities of Aſia were overturned by an earthquake, and in 420 there was an eruption of Etna. There was alſo an inundation of the ſea in Hampſhire, in England, in 419. Famin and peſtilence prevailed alſo in this period.—A great ſtorm of hail is mentioned under the year 418, and deep ſnow.

The next period of general peſtilence commenced in the reign of Theodoſius the younger, about the year 445—or a year or two earlier. A comet in 442, uſhered in a ſevere winter, in 443, the ſnow fell to ſuch a depth and continued ſo long in Illyricum, that multitudes of men, women and children periſhed. The year preceding, the Huns had ravaged the country and deſtroyed the proviſions, which added to the public calamities. An irruption of the Sea in North and South Wales, 441, preceded the firſt comet, a ſecond comet appeared in 444. In 445, ſevere famin and plague diſtreſſed Conſtantinople, and peſtilence appeared in all parts of the world. In 446, Sept. 17, occured a tremendous earthquake, which demoliſhed the greateſt part of the walls of Conſtantinople, with fifty ſeven towers. The ſhocks continued unremittingly for ſix months, and extended to a great part of the globe. Many cities were overthrown, the earth, in ſome places, was thrown into large hills; in others, it opened and ſwallowed up whole towns. Iſlands diſappeared and were loſt in the ocean; the ſea receding, left ſhips on dry land, ſprings of water were dried up and new fountains appeared, and in this violent concuſſion of the elements periſhed innumerable multitudes of fiſh.

The peſtilence attending, and which rarely fails to attend ſuch agitations of the earth, was univerſal and of ſeveral years duration. In this period, the plague in England was correſpondent to the terrible operations of ſubterranean fire. In 448 or 9, it carried off incredible numbers of people, ſo that the living could ſcarcely bury the dead.—And it muſt not be omitted that the plague was preceded by the greateſt abundance of proviſions. This was in the reign of Vortigern, and in time of peace.

Niceph. lib. 14. ca. 46. Beda. Ec. Hiſt. 51, 52. Baronius, vol. 6. p. 30, 36, 37, 38. Echard. vol. 3. 331. Magdeb. Cent. 5. ca. 13.

An important fact here occurs. In 446, the Picts and Scots had overrun and deſolated England, ſo as to occaſion a dearth of proviſions. But this famin produced no peſtilential diſeaſe. It is particularly noticed by the hiſtorian, that the plague did not occur, till a year of great plenty had intervened. This is one ſtrong proof among others, that famin is not the *cauſe* of plague; but often accompanies, and ſometimes increaſes the diſeaſe. It often happens that, during extraordinary agitations of the earth, the elements of vegetable life appear to be defective. The ſame cauſe which affects human health, ſeems to prevent the growth or vitiate the pabulum of vegetables.*

The cloſe of this period was peculiarly diſtreſſing in Italy, Phrygia, Cappadocia and Galatia, where the famin compelled parents to devour their own children. The peſtilence made great havoc, at the ſame time, and no remedy or alleviation could be found. The body was univerſally inflamed and covered with tumors. The diſeaſe deſtroyed the eyes. A cough ſucceeded the eruption, and ended life on the third day.

Niceph. lib. 15 ca. 10.

This was in the beginning of the adminiſtration of the Emperor Marcian, which commenced in 450, in which year another comet was diſplayed in the heavens and a ſingular light or flame, a ſevere drouth " ingens ſiccitas," afflicted the earth, and the calamities of this period continued for ſeveral years.

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* General deſcriptions are ſeldom correct. I have already taken notice of the miſtakes committed by Newton and Gibbon, whoſe general deſcriptions lead, in the inſtances mentioned, to falſe concluſions. A ſimilar miſtake occurs in Henry's excellent Hiſtory of Britain, vol. 1. ch. 1. concerning the calamities of the Britons, in the period under conſideration. The author ſays, "the neglect of agriculture naturally produced a famin, which was followed by a peſtilence."—Theſe facts are not correctly ſtated. The incurſions of the Picts and Scots had occaſioned the neglect of culture and a famin; but this famin was followed by plentiful crops, which were ſucceeded by peſtilence.

It muſt be remarked here that Functius has placed this comet and the beginning of Marcian's reign, in 454. Such differences in chronology cannot fail to embarraſs an inquiry like the preſent, the reſults of which depend much on correctneſs of dates.

Nicephorus and Evagrius give a particular account of an earthquake which laid great part of Antioch in ruins in the ſecond year of the Emperor Leo, which was A. D. 458. A comet is noted under the preceding year. But they ſay further, that this event took place 347 complete years after the deſtruction of the city in the reign of Trajan, which was in 117. Now 347 years added to this number, give 464, for the year of the laſt cataſtrophe.

Niceph. lib. 15. 20. Evag. lib. 2. 12 and 14.

In the 311th Olympiad, which comprehends the years from 465 to 468 incluſive, appeared a comet. Whether the deſtruction of Antioch was in 458 or 464, the extent of the ſhock, through Thrace, Helleſpont and the Grecian iſles, together with the deluges of rain which are ſaid to have ſwept away whole towns in Bithynia, leave no room to queſtion the approximation of a comet at or near the time.

Byzantine Hiſt. vol. 15. Evag. lib. 2. 14.

This latter period was diſtinguiſhed for peſtilence which raged in Rome, about the acceſſion of Anthemius to the empire, and according to Baronius in the year 467.

Vol. 6. 281.

In the following year, a number of houſes were overthrown by an earthquake at Vienna. Of the extent and duration of the peſtilence, I have no particular deſcription. A great eruption of Veſuvius is mentioned in 472, and a ſevere winter of four months duration, in 473 with deep ſnow.—The plague ſucceeded in Rome.

In the year 480 Conſtantinople again ſuffered great damage by an earthquake, which demoliſhed a great number of buildings.

In 480 or the following year another comet was viſible; or probably two years later. In 484 occurred a drouth moſt terrible and diſtreſſing—not a vine nor an olive branch retained its verdure—the earth was pale and deſolate, and the ſun aſſumed a melancholy face.. Africa was almoſt abandoned, in conſequence of this event and an attending plague.

Baron. vol. 6. 343, 426 and 7.

Baronius places the earthquake at Conſtantinople in 477, but others place it in 480, which is moſt probably correct. The difference in the chronology of different authors, who relate the events of theſe early ages, is ſeldom leſs than two, three and four years.—The plague infeſted Scotland in 480.

In 494 an earthquake overturned Laodicea, Hierapolis and Tripoli. According to Functius, this event was in 496.

Magdeb. vol. 3. Cent. 6. ca. 13.

In 499 appeared a comet, which was ſoon followed by an earthquake which deſtroyed Neo Ceſarea, in Pontus, and an eruption of Veſuvius laid waſte all the adjacent country.

Zonoras lib. 3. Baron. vol. 6. 541. Magd. Cent. 6. ca. 13. p. 789.

A comet is noted in 502, and a ſevere winter in 507, but I have no account of any public calamity, attending either of theſe phenomena, except a peſtilence among men and cattle in Scotland, in 502.

In 517 is recorded a five year's drouth in Paleſtine.

Encyclop. Chronol.

In 518 a comet; and in Dardania, now Mæſia, a ſeries of earthquakes demoliſhed twenty-four caſtles, divided mountains and in one place opened a fiſſure of thirty paces in length and twelve in breadth.

Baronius vol. 6. 702.

In 519 two cities in Cilicia were overthrown; Ediſſa was inundated and part of its buildings and inhabitants overwhelmed.

Zonoras, Tom. 3. Magd. Cent. 6. p. 791.

Evagrius places the inundation at Ediſſa, in the following period, after the deſtruction of Antioch; and as the hiſtorians do not always ſpecify the year in which a particular event took place, I am inclined to believe the account of Evagrius.

Lib. 4. ca. 8.

In the 7th year of the Emperor Juſtin, A. D. 525, appeared a comet, and the ſame year Antioch was again overwhelmed in ruin by an earthquake. Some authors relate that 300,000 perſons periſhed in this cataſtrophe, and among them Euphraſius, the biſhop.—This event happened on the 29th of May, about 12 o'clock. A conflagration followed and conſumed what was left of the city. In the ſame ſhocks, Dyrrachium, now Durazzo, the Epidaurus of high antiquity, Corinth and other cities were greatly injured.

Baronius vol. 7. 109, 110, 111. Niceph. lib. 7. 3. Evag. lib. 4. Zonoras Tom. 3.

A ſevere winter happened the ſame year.

In 528 Antioch was again ſhaken and ſuffered conſiderable injury. An inundation of the Humber in England is noted about this time.

In 531 appeared the reſplendent comet, whoſe revolution is fixed at 575 years, ſuppoſed to be the ſame which was viſible in the year before Chriſt 44, after the death of Julius Ceſar. This was the fifth year of the reign of Juſtinian. Famin and a ſlight plague prevailed in Wales.

At this period Gibbon commences his lively, but unphiloſophical deſcription of the formidable and deſtructive calamities, which afflicted the whole earth in the 6th century. See his hiſtory, vol. 4. ch. 43.

Not long after the approach of the comet in 531, the ſun aſſumed a pale color, and ſhone with a feeble light. In a tranſlation of Cedrenus, this phenomenon is thus deſcribed. "Toto anno eo, ſol lunæ inſtar, ſine radiis, lucem triſtem præbuit, plerumque defectum patienti ſimilis." During the whole year, the ſun gave a gloomy light, like the moon, and appeared as if eclipſed.

Byzantine Hiſt. 3. 293. Procop. de bell. Vandal. lib. 4.

It is remarkable that tradition has preſerved a faint account of a ſimilar phenomenon, during the approach of the ſame comet, at the time of the Ogygean inundation, before Chriſt 1767. It is ſaid, that the planet Venus changed her color, ſize and figure. An account is preſerved in tradition, of a phenomenon of the ſame nature, during the approach of the ſame ſtar, in a ſubſequent revolution. Gibbon in the chapter above cited.—Pliny, as I have already remarked, mentions a ſimilar phenomenon, about the time the ſame comet appeared, ſoon after the death of Julius Ceſar.

The appearance, in the period under conſideration, is a well authenticated fact, and witneſſes a ſingular change in the properties, and reflecting powers of the atmoſphere, or denotes an eſſential alteration in the face of the ſun, which is improbable. In either caſe, it ſeemed a prelude to the moſt dreadful calamities, famin, earthquakes, and peſtilence. I am not without ſuſpicions that Europe might have been overſpread with a vapor like that in 1783, during the eruption of Heckla.

In 534 is recorded one of the moſt diſtreſſing famins, that ever afflicted the earth; it continued many years, and deſtroyed multitudes of the human race. Pompeiopolis was this year overwhelmed in ruin by an earthquake, and great numbers of its inhabitants periſhed.

Paul. Diac. lib. 16.

About this period, Veſuvius began to utter hollow rumbling noiſes, the precurſors of an eruption.

Baron. vol. 7. 218. Procop. de Bell. Goth. Magdeb. Cent. 6. p. 793.

Excepting a ſlight plague in Wales—no peſtilence is mentioned by the authors I have conſulted, until the year 542. But the famin, in great ſeverity, had raged eight or nine years before—a proof that ſomething more than famin is neceſſary to generate the plague.

In 539 appeared another comet, and the famin now raged with double horror. The country of Italy had been ravaged, the year before by the Goths and Burgundians, and the lands left untilled. This might have contributed towards the dearth which followed. It is recorded that many perſons fed on human fleſh, ſome diſtricts of Italy were deſerted, 50,000 people periſhed in Picenum, and greater numbers in other diſtricts. The bodies of the famiſhed people became thin and pale; the ſkin was hardened and dry like leather, and clave to the bones; the fleſh aſſumed a dark appearance like charcoal, the countenance was ſenſeleſs and ſtern, the bile redundant.

Procop. de Bell. Goth. lib. 1.

Among theſe frightful effects of hunger, no plague yet apyears—a circumſtance that the philoſopher ſhould not paſs unnoticed.

The account which Baronius gives of this famin, is, perhaps more philoſophical and deſerves notice. He ſays, the crops failed, corn ripened prematurely, and was thin; in ſome places, it was not harveſted, and that which was gathered, was deficient in nouriſhment. Thoſe who ſubſiſted upon it became pale, and were afflicted with bile. The body loſt its heat and vigor, the ſkin was dried, the countenance ſtupid, diſtorted and ghaſtly, the liver turned black. Many periſhed by hunger; many betook themſelves to the fields to feed on vegetables, and being too feeble to pull them, lay down and gnawed them off with their teeth.

Baronius, lib. 7. 326.

This is the moſt probable account of the famin. Repeated inſtances are on record, which evidently mark a peſtilential ſtate of the elements, as fatal to vegetable, as to animal life. In many periods of the world, there has been a univerſal defect in the powers of vegetation. This phenomenon in the vegetable kingdom is cotemporary, or nearly ſo, with peſtilence among men; and ſuperficial obſervers have aſcribed the plague to a prior or cotemporary famin. But an accurate ſurvey of facts, will probably convince any candid enquirer after truth, of the fallacy of this opinion. It will be made apparent that famin and peſtilence are equally the *effects* of ſome general cauſe; a temporary derangement of the regular operations of nature.

In the preſent inſtance, the famin could not be excluſively and immediately the cauſe of the formidable plague that afterwards aſſailed mankind, for it was moſt ſevere in 539, and the next year the crops were good. But the plague did not break out till 542, at leaſt I can find no account of any peſtilence, during the famin.

An eruption of Veſuvius is noted under the year 532, the year after the appearance of the great comet.—It is probable that the paleneſs of the ſun was owing to a vapor from ſome volcanic eruption, as in 1783; and it is remarkable that both of theſe periods alike produced famin from defective vegetation.

During the remaining part of this century, a ſeries of moſt calamitous events afflicted the earth. A mountain in Rhodes burſt open, and a part of it rolled down upon the inhabitants below. Many places ſuffered by inundations, one of which overwhelmed the borders of Thrace for an extent of four miles.

In the year 543, the whole earth was ſhaken by earthquakes. This was the year in which the plague broke out in Conſtantinople; but it commenced in Egypt, the preceding year.—In 543 there was a dearth of corn, wine and oil. The plague again ravaged Conſtantinople in 547.

In 545 there was an inundation of the Thracian ſea, and a ſevere winter. A terrible dyſentery in France in 548.

See Cedrenus, and Paulus Diac. lib. 16.

In 550 an earthquake convulſed Syria and Paleſtine; and Greece in 551. In 553 appeared a ſingular meteor in the north and weſt, which was preceded by a winter ſo ſevere that wild beaſts and fowls might be taken by the hand. Inundations marked this period. Conſtantinople was ſhaken 40 days in 554.

Paul. Diac. Madeburgh Cent. 6. ca. 13.

In 557 Conſtantinople was almoſt laid in ruins by an earthquake. In 558 a comet appeared, a ſevere winter followed and univerſal plague, eſpecially in Conſtantinople, where the living could not bury the dead. This year the Danube was covered with ice.

In 560 an earthquake deſtroyed Berytus and injured Cos, Tripoli, and Balbus. An exceſſive drouth in 562, and a plague began which ſpread over the whole world. There was a dark day in the ſame year.

The year 565 was diſtinguiſhed for a calamitous plague, in France, Germany and Italy, which Baronius calls "vehemens peſtis inguinaria."

Vol. 7. 547.

In 580 Antioch was again laid in ruins by an earthquake, and a ſhock was felt in Scotland. The plague again prevailed, from that year to 583, in Gaul and Germany and other countries. In 587 it ravaged Italy. Earthquakes attended this period.

In 590 appeared a comet; an inundation, from deluges of rain, overſpread Rome, covering the walls of the city, and lodging innumerable ſerpents on the plains. In the next ſummer, happened the ſevereſt drouth ever known; it laſted from January to September; and the moſt deadly plague ravaged all Italy. In this peſtilence, died Pope Pelagius.

This is a general ſketch of the phenomena recorded of the period under conſideration.

Of the univerſal and deſtructive plagues which diſpeopled the world in the reign of Juſtinian I. and the ſucceeding age we have accurate accounts by cotemporary hiſtorians: From two of which, Procopius and Evagrius, I ſhall tranſcribe the particulars.

Procopius relates, " That this peſtilence, which almoſt deſtroyed the human race, and for which no cauſe could be aſſigned but the will of God, did not rage in one part of the world only, nor in one ſeaſon of the year. It ravaged the whole world, ſeizing all deſcriptions of people, without regard to different conſtitutions, habits or ages; and without regard to their places of reſidence, their modes of ſubſiſtence or their different purſuits. Some were ſeized in winter; ſome in ſummer; others in other ſeaſons of the year.

It firſt appeared in Peluſium in Egypt and thence ſpread weſtward to Alexandria and all parts of Egypt; eaſtward towards Paleſtine, and extended to all parts of the world, laying waſte iſlands, caves, mountains, and all places where men dwelt. If it paſſed by a particular country at firſt, or *ſlightly affected it*, it ſoon returned upon it with the ſame deſolating rage which other places had experienced.—It began in maritime towns and ſpread to the interior country. It ſeized Conſtantinople in the ſpring of 543.

Moſt perſons were ſeized ſuddenly without any premonition, nor was there any change of color or ſenſe of heat; for until evening the fever was ſo ſlight that the patient was not ill, nor did the phyſician, from the pulſe, apprehend danger. But in ſome caſes, the ſame day; in others, the next; in others, at a later period, a bubo aroſe, either in the groin, the arm pits, or near the ear, or in ſome other part. All patients alike had theſe ſymptoms.

Some were ſeized with drowſineſs and ſlumbering; others with furious diſtraction. The ſlumberers forgot all things—ſome would eat if deſired; others were neglected and ſtarved.

Neither phyſician nor attendant caught the diſtemper by contact of the ſick or dead; and many, encouraged by their wonderful eſcape, applied themſelves with aſſiduity to the care of the ſick and the burial of the deceaſed.

Many were ſeized, they knew not from what cauſe, and ſuddenly died. Some who were given over by phyſicians unexpectedly recovered; others who appeared to be in no danger ſpeedily expired. Many died for want of relief; others recovered without aſſiſtance. No cauſe of the diſeaſe could be deviſed by human reaſon—no means of prevention or cure. To ſome, bathing was beneficial; to others, injurious. Many leaped into water and the ſea—In many the bubo, without ſleep or delirium, turned into a gangrene, and theſe died with excruciating torture.

The phyſicians opened the bodies of ſome, and found within the ſores huge carbuncles. Thoſe whoſe bodies were ſpotted with black pimples, of the ſize of a lentil, lived not a day. Thoſe who had running ſores eſcaped, and theſe were the moſt certain ſigns of recovery. Some had their thighs withered; others loſt the uſe of their tongues.

To women with child, the diſeaſe was certain death.

This diſeaſe in Conſtantinople laſted four months, raging three months with extreme mortality. In the beginning, few died more than uſual; but the diſeaſe gradually increaſed, till it ſwept off 10,000 perſons in a day."

Procopius calls it arrogance to pretend to aſſign the natural cauſes of this peſtilence, declaring them to be undiſcoverable.

Perſic. lib. 2. ca. 22.

Authors mention the early effects of this diſeaſe on the brain; the patients, on the firſt attack, ſaw phantoms of evil ſpirits, which made them imagine themſelves ſmitten by ſome perſon.

Evagrius, who felt the effects of the ſame diſeaſe himſelf and loſt many of his family by it, has enumerated ſo many ſingular circumſtances, that I ſhall offer the reader a tranſlation of his account. When I ſay, *the ſame diſeaſe*, I refer however to a ſubſequent epidemic. Procopius, as an eye witneſs, deſcribed the peſtilence of 543 in Conſtantinople. It did not continue inceſſantly to rage in every place, for this would have ſoon left the earth without an inhabitant; but after an interval of a few years, it returned and reviſited the ſame places. The plague deſcribed by Evagrius was many years ſubſequent to that mentioned by Procopius. He wrote about the year 594. His deſcriptions however are general.

See Hiſt. Eccleſ. lib. 4. ca. 29.

" I will now deſcribe the plague, which has prevailed in theſe times, and already raged fifty-two years, a thing never before known, and has already depopulated the world. Two years after the taking of Antioch by the Perſians,* a peſtilential diſeaſe began to prevail, in ſome reſpects reſembling that which Thucydides has deſcribed, in other reſpects different. It had its origin in Ethiopia, according to common report, and ſpread over the whole world, falling on different places by turns, and ſparing none of the human race.

Some cities were ſo ſeverely aſſailed by this diſeaſe, that they were left without an inhabitant. Some diſtricts however were more ſlightly affected. The peſtilence did not always begin its attacks at the ſame ſeaſon of the year, nor ceaſe to rage, in all places in the ſame manner. In ſome places it broke out in the midſt of winter; in others, in the ſpring; in ſome, it began in ſummer; in others, in autumn; and in ſome cities, it attacked certain parts of the town, and left others untouched.

Very often we might obſerve, particular families all periſhed, in a city where the diſeaſe did not prevail, as an epidemic. In ſome places, one or two families only periſhed, while the reſt of the city eſcaped. But we obſerved particularly that the families which eſcaped, the firſt year, experienced the ſame calamity in the year ſucceeding.

But what above all appeared ſingular and ſurpriſing was, that the inhabitants of infected places, removing their reſidence to places, where the diſeaſe had not appeared, or did not prevail, were the only perſons who fell victims to the plague, in the cities which were not infected. And theſe effects were particularly obſervable, both in cities and in other places, in the cycles of the *Indictions*.[*] Eſpecially in the ſecond year of each indiction, was the plague extremely mortal. Of this I am myſelf a witneſs, for it may not be improper, when the occaſion ſeems to require it, to interweave into this hiſtory what concerns myſelf. At the commencement of this calamity, I was ſeized with the *inguinal plague;* and in the diſeaſes, which have at different times prevailed, I have loſt many of my children, my wife and great numbers of my kindred, of my ſervants and laborers: the cycles of indiction parcelling out my calamities among themſelves.

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* Under Choſroes A. D. 540.

At the time of writing this account, the diſeaſe had already invaded Antioch the fourth time; the fourth cycle of indiction had paſſed, after the firſt invaſion of this diſeaſe, when I loſt a daughter, and her ſon.

This diſeaſe was a compound of various others. For in ſome perſons, ſeizing the head, it rendered the eyes ſanguineous and the face tumid: Then falling upon the throat, ſoon put an end to life in all that were thus ſeized. Some were afflicted by diſcharges from the bowels. In others an abſceſs formed in the groin, a raging fever followed, and the ſecond or third day, the patient died, with his body and his mind apparently ſound, as tho they had not felt diſeaſe. Some were ſeized with delirium and expired. Carbuncles alſo ariſing on the body extinguiſhed the lives of many. Others recovered once and again, and afterwards died of the ſame diſeaſe.

The modes of contracting the diſeaſe were various and all calculation was baffled. Some periſhed by once entering infected houſes, or remaining in them—ſome by only touching the ſick. Some contracted the diſeaſe in open market. Others, who fled from the infected places, remained ſafe, while they communicated the diſeaſe to others who died. Many who remained with the ſick, and freely handled them as well as dead bodies, wholly eſcaped the diſeaſe. Others who had loſt their children and dependents, and in deſpair ſought death, by attempting to throw themſelves in the way of infection and aſſiduouſly attending the ſick, found all their efforts in vain; they could not contract the diſeaſe.

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[*] The *cycle of indiction* was a period of 15 years, at the end of which the Romans paid a certain tax to the Emperors.

The diſtemper has already prevailed fifty-two years, to this time, exceeding all preceding plagues: For Philoſtratus was ſurpriſed that, in his time, that calamity had prevailed for fifteen years. What will happen hereafter is uncertain, ſince all things are at the diſpoſal of God who underſtands the cauſes of things and the events."

Thus far Evagrius. See alſo Nicephorus lib. 17. ca. 18.

The reader is deſired to attend particularly to the foregoing relation of facts, as ſome important concluſions will, in the ſequel, be drawn from them, and other authorities hereafter to be cited.

It will be remarked that altho authors ſpeak of this peſtilential period, as of fifty-two years duration, as Evagrius and Gibbon have done, yet this is not accurate. Evagrius, from whom this number is copied, ſays, the peſtilence had then prevailed fifty-two years; but it was ſtill raging, and what was to happen afterwards, he could not determin.

The truth is, plagues were uncommonly frequent during this period; but the diſeaſe did not prevail without intervals. On the contrary, the years remarkable for mortality are ſpecified by hiſtorians, viz. 542 and 3, 547, 558, 562 to 565, 582 and 3, 587, and finally one of the moſt deſtructive periods of all was 590 and the few following years. Altho this was a long and ſevere period of calamity, yet from the beſt accounts I can obtain, I ſee no reaſon to believe the mortality, in any given term of five or ten years, from 542 to 600, to have been greater, than in ſome other periods of the ſame duration. More people probably died in a ſhort ſpace of time, in the reign of the Antonines—in that of Gallus and Voluſian—and far more, in the dreadful plague of 1346 to 50.—It is even probable that in the laſt 50 years of the 16th century, the earth ſuſtained as great a loſs of inhabitants as in the ſame ſpace of time in the 6th century. General deſcriptions are rarely correct, and Mr. Gibbon's unphiloſophical, tho eloquent *flouriſhing* deſcription of the miſeries of the human race, in Juſtinian's reign is calculated to miſlead a careleſs reader.

Evagrius indeed ſays, this plague exceeded all preceding ones. This is natural; Thucydides ſaid the ſame of the diſeaſe in his time. But we are more able to form a correct compariſon between the different epidemics that have prevailed, than the cotemporaries with any particular one.

Agathius relates that in the peſtilence at Conſtantinople in 558, many died ſuddenly as with an apoplexy. The moſt robuſt conſtitutions ſurvived only to the 5th day. The critical period in the Athenian plague was the 7th or 9th. Thucydides makes no mention of the ſtupor at the beginning of the diſtemper, nor of the volutatio humi, whirling of the earth, or dizzineſs, nor of buboes, nor of the effects of the diſeaſe on pregnant women.

Freind's Hiſt. of Medicine 416 et ſeq. Baron. vol. 7. 357, 358.

Warnefred relates of this peſtilence, in Liguria, where it was particularly mortal, that there appeared ſuddenly certain marks "quædam ſignacula," upon the doors of houſes, on garments, and utenſils, which could not be waſhed out but grew brighter by waſhing. The next year, appeared in men's groins, or other delicate parts of the body, tumors like nuts or dates, which were ſoon followed by intolerable fever, which extinguiſhed life in three days. If the patient ſurvived the third day, he had hopes of recovery.

I ſhould have ranked this account among the fictions of a diſturbed imagination, had not more recent and well atteſted facts given me reaſon to credit it.

The deſcription of the terrible effects of this diſeaſe in Italy by the ſame author, is melancholy and painful to the reader.

The dyſentery which raged in France in 548 was accompanied with ſigns of the plague, and was nearly equal to it in mortality. The plague raged this year at Munſter, in Ireland.

Short vol. 1. 67. Smith's Hiſt. Cork 10.

The deſolating plague of 590 was mortal almoſt beyond example, and preceded or attended with extraordinary phenomena. In 588 Antioch was overwhelmed by a violent earthquake, and 60,000 people buried in its ruins. The inundation of the Tyber exceeded all that had been known, as did the drouth of the ſucceeding ſummer. The intervening winter was equally remarkable for its ſeverity—" qualem vix aliquis prius recolebat ſuiſſe," ſays Warnefred ; ſuch as the oldeſt perſons could ſcarcely recollect. Violent tempeſts overturned buildings. About the ſame time, ſwarms of locuſts appeared in Trente and devoured every ſpecies of vegetable. In ſome parts of Italy, they continued their ravages for five years. Cedrenus adds, that fiſh died, and this mortality he aſcribes to the freezing of the waters, page 332. —Modern obſervations prove the fallacy of the reaſon here aſſigned ; fiſh do not die beneath a cover of ice ; but the death of fiſh by means of earthquakes, and of ſickneſs, is a common event.

Aguſt. Hiſt. 1156, 1157. Magd. Cent. 6. ca. 13.

The order of the phenomena here related was this—the earthquake at Antioch—deluges of rain and inundations, tempeſts, a moſt rigorous winter, with a comet, exceſſive drouth, peſtilence.

See alſo Echard's Rom. Hiſt. vol. 4. 246.

Africa was almoſt depopulated by this plague. So ſudden and rapid was the diſeaſe in its action, that during a proceſſion in Rome, inſtituted by St. Gregory, on account of that calamity, no leſs than eighty perſons fell dead in the ſtreet.

Authors relate that the ſerpents, waſhed from the mountains by the flood, and lodged on the earth, putrefied, and contributed to the ſubſequent plague.

Gregory of Tours relates, that the plague, at that time, was introduced into Gaul by a veſſel and her cargo ; but it did not ſpread regularly from houſe to houſe, but ſtarted up in diſtant and detached places, like fire in a field of ſtubble. Marſeilles and Lyons were made waſte by its mortality. It was moſt fatal to the poor.

Lib. 9.

The following facts are related of the peſtilence in Rome in

581, in the collection of German writers by Piſtorius, page 683. Men died ſuddenly, at play, at table, and in converſation. Sometimes they fell dead in the act of ſneezing, " dum ſternutabant," ſo that when one heard another ſneeze, he turned to him and exclaimed, " God help you"—which was the origin of a cuſtom ſtill obſerved in ſome countries.* Sometimes perſons expired in the act of nodding or gaping; which gave riſe to the practice of making the ſign of the croſs, on ſuch occaſions—a cuſtom not yet obliterated.

In 599, the plague in the eaſt, in Africa and Rome, was dreadful. The death of the Emperor Mauritius, in 602, was preceded by the appearance of a comet. A ſevere winter, about this time, killed the vines, and grain ſuffered by froſt and blight. The army of barbarians, marching to beſiege Conſtantinople, was ſo harraſſed and weakened by the plague, as to be compelled to abandon the enterprize. Cayanus their commander loſt ſeven ſons.

Niceph. lib. 18. 35. Magd. Cent. 6. 13 and 7. 13.
Baron. vol. 8. 138. Paul. Diac. lib. 4.

The Magdeburgh Hiſtory mentions a ſevere winter in 604, which was followed by exceſſive heat and drouth in 605. It places the firſt comet of 606 in April and May; the ſecond in November and December.

Cent. 7. 13.

The year 615 was diſtinguiſhed for an epidemic elephantiaſis in Italy, and the ſhock of an earthquake. A comet appeared in 617 and peſtilence in 618.

Baron. vol. 8. 243. Short vol. 2. 207.

Here is a period in which mention is made in hiſtory of comets, without all their attendant calamities—one in 625, another in 632. It is the firſt period of the kind I have been able to find; and whether this ſilence of hiſtory is to be aſcribed to the careleſſneſs of writers in that diſtracted period, when the world was overrun by barbarians, or whether men eſcaped extraordinary maladies, I am not able to decide.

An earthquake in Paleſtine however marked the approach of the comet in 632.

Funct. Chronol.

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* This cuſtom was of higher antiquity.

Short mentions an earthquake at Antioch in 637; and ſhocks in Paleſtine in 638 which continued for 30 days—a comet in 639, and the plague in Syria in 640. But I have not the original authorities. The Univerſal Hiſtory relates that in 639, the plague was ſo ſevere in Syria, Arabia and in Medina, that the Arabs call that year the "Year of Deſtruction."

Vol. 1. 485.

A general peſtilence in Italy is mentioned in hiſtory under the year 651, but no particulars. A ſurpriſing meteor had paſſed the hemiſphere, in the preceding year. A violent plague in Conſtantinople in 654.

Functius Chron. Magdeb. Cent. 7. ca. 13.

In 664 peſtilence raged in Normandy, England and Ireland; and the hiſtorian remarks that the ſame diſeaſe which had afflicted England, afterwards invaded Italy in 665. Thus it would appear that this epidemic broke out *firſt* in the north of Europe.

Beda, Eccle. Hiſt. p. 136. Baron. vol. 8. 496.

But the diſeaſe appeared in Egypt the ſame year it did in England and Ireland.

Paul. Diac. 980.

In the ſame year, in March, appeared a bow, iris, ſtretching acroſs the heavens, and all fleſh trembled, ſays the pious Diacon, expecting the laſt day.

Ibm.*

In 669 or 70 appeared a ſingular meteor or flame in the heavens—the next year an unuſual ſtorm that deſtroyed men and cattle; and in 672 the plague raged in England, of which died Biſhop Ceadda.

Beda, lib. 4.

Short mentions a comet in 672, and a ſevere froſt in 670, the year of the celeſtial flame.

In 678 according to Beda, and in 677 according to Sigebert, in the 9th or 10th year of Conſtantine Pogonatus, appeared a comet in Auguſt, which was viſible for three months. The year preceding was marked by moſt calamitous tempeſts which cut ſhort the fruits of the earth, except leguminous vegetables which were replanted and come to maturity. About the ſame time appeared clouds of locuſts in Syria and Meſopotamia. Univerſal peſtilence *followed* theſe phenomena, in 679 and 680. England and Ireland were ravaged by it in 679; and in 680, during July, Auguſt and September, Rome was laid waſte: " parents and children, brothers and ſiſters, were borne to their graves on the ſame bier." Multitudes of people fled to the mountains, and the ſtreets of the city were overgrown with graſs and weeds. A violent earthquake ſhook Meſopotamia and other countries in 680. The locuſts appeared two years *before* the earthquake, and in the ſame year with the comet, according to Paulus Diaconus. A ſevere drouth followed the comet, which in England laſted three years.

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* Livy mentions a ſimilar bow at Rome, during a great plague.

See Paul. Diac. lib. 6. Beda, Ec. Hiſt. p. 116. Baron. vol. 8. 526, 544. Magd. Cent. 7. ca. 13. Muratori, vol. 6.

In 681 famin, ſays Beda, raged in England, and in 683, peſtilence " quæ ex more famien ſecuta eſt," ſays Paulus Diaconus. In this latter year, if this was the ſixteenth of Conſtantine, according to Baronius, there was a violent eruption of fire from Veſuvius, which laid waſte all the neighborhood.

Baronius, vol. 8. 564. Magd. Cent. 7. cap. 13.

In the ſame year Syria and Lybia were afflicted by famin and peſtilence.

Other authors place this laſt peſtilence two years later. The diſeaſe raged in Ireland in 685, in which year, there was a great inundation of the ſea and the iſland of Inisfidda was torn into three parts. In 687, or according to others in 684, appeared a ſtar, which was probably a comet, but without a coma.

Smith's Cork, p. 11. Magd. Cent. 7.

Warnefred relates that a ſingular meteor appeared in 685.*

Notwithſtanding ſome differences among authors reſpecting the time of the events here related, we obſerve all the violent agitations of the elements which introduce and attend great plagues.

In 690 happened in Italy, one of the greateſt inundations from rain that was ever known—a ſevere peſtilence followed, "Peſtis inquinoria."

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* We cannot but notice the coincidence in time between meteors and volcanic eruptions.

In 696, the ſame diſeaſe raged in Conſtantinople; but no particulars are mentioned.

Magd. Cent. 7.

A ſevere winter preceded this peſtilence, when the Thames was covered with ice for ſix weeks.

In 707 a terribly ſevere winter is mentioned and a violent earthquake in Scotland. Short mentions peſtilence in Scotland in 703 and in 713, but I have no particulars.

In 717 happened a very ſevere winter, ſo that animals died of cold; and the ſame year, a great overflowing of the Tyber. The Saracens, in an immenſe army, marching to beſiege Conſtantinople, periſhed with cold, hunger and peſtilence, and in the city, the plague extinguiſhed the lives of 300,000 of its inhabitants. An earthquake in Syria in 718.

Paul. Diac. lib. 6. 47. Baron. vol. 9. 15.
Magd. Cent. 8. ca. 13. Cedrenus.

Here is a chaſm in the hiſtory of comets of 40 years—at leaſt I can find no mention made of them from 685, to 729. The ſevere winter and the inundation of 717 however leave very little room to queſtion the approximation of one at that time, and others doubtleſs appeared, during this period.*

There was a great plague in Conſtantinople in 724.

In the year 725, a vapor like ſmoke iſſued for ſeveral days, from the ſea between Thera and Theraſia, the two iſlands which, many centuries before, had ariſen from the bottom of the ſea. With this vapor iſſued denſe ſubſtances, which, when expoſed to the air, grew hard and formed a ſpecies of pumice, with which the neighboring ſea and the countries of Aſia Minor and Macedonia were covered. A ſmall iſland aroſe at the ſame time.

Magd. Cent. 8. ca. 13. Muratori, vol. 1. 151.

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* I have found no author that mentions a comet about this time; but it is worthy of remark that the ſplendid comet of 1401 was calculated to have a period of 343 years. This was therefore the ſame which appeared in 1744. If this calculation is juſt, the ſame comet muſt have appeared in 1058—in 715—in 372—and in 29 or 30; or near theſe years. Now it appears that there was one in 1058 and in 375 attended with all the uſual calamities—it is therefore preſumeable that it appeared in 715 or 16.

In 729 appeared two comets in January; one preceding the ſun, viſible in the morning; the other following it, was ſeen in the evening. The ſame year the plague prevailed in Norwich.

A plague in Syria raged in 732, but no particulars are mentioned. The following year, the heavens appeared all in a flame.

Magd Cent. 8. ca. 13.

The next peſtilential period is remarkable for the violence of the operations of nature.

In 740 a tremendous earthquake, or rather a continuation of ſucceſſive ſhocks for twelve months, announced the commencement of a ſeries of calamities. It began on the 7th Kal. November, and demoliſhed buildings, ſtatues and walls in Conſtantinople, with a multitude of cities in Thrace, Nicomedia and Bythinia. Sigibert places theſe events in 741.

In 742, or as others ſay in 743, a moſt ſevere drouth was followed by moſt terrible earthquakes. The next year appeared a comet and the year following, another; and the third year after the drouth, which was either in 745 or 6, according to different authors, a remarkable thick darkneſs covered the earth from Auguſt to October. At this time the plague was raging at Calabria in Naples, and it continued to ſpread with dreadful havock for ſeveral ſucceeding years, in the countries of the eaſt. So violent was it in Conſtantinople in 746, that the living could not bury the dead; but the bodies were carried in cart-loads and thrown into empty ciſterns, and any place that would conceal them from the ſight. Fatal indeed was the diſeaſe, when "eodem die aliquis mortuum efferebat, et ipſe mortuus afferebatur"—the man who buried a corpſe, was ſometimes carried, the ſame day, to his grave.

In the order of the events here related authors agree. Cedrenus mentions an extraordinary light or flame in the ſky in 742, and a ſimilar flame in the north, the year following. He mentions at the ſame time a famin in Conſtantinople; and limits the darkneſs to five days, from the 10th to 15th of Auguſt.

Paulus Diac. Hiſt. Auguſt. 10. 19. Magd. Cent. 8. 13.
Baron. vol. 9. 144, 185.

At the cloſe of this period and while the plague raged in Conſtantinople, in 749 or 50, Syria was laid waſte by an earthquake

—whole cities were exterminated—others removed entire from mountains to plains, for a diſtance of ſix miles. This cataſtrophe correſponded with the approach of a comet. Short mentions two.

Magd. Cent. 8. 13. Baron. vol. 9. Short. 1. 81.

Such was the waſte of people in Conſtantinople by the preceding plagues, that the emperor Conſtantine repaired the loſs by introducing the inhabitants of neighboring countries.

In 760 or 61, for this difference occurs among good authorities, appeared a comet, or light, called *dokites*, by the Greeks, from its reſemblance to a beam; which was viſible 10 days in the eaſt and 21 in the weſt.—In 762 appeared two other comets and the following winter was the moſt ſevere probably on record. It began about the firſt of October, and laſted till February. The Euxine ſea was frozen to the diſtance of one hundred miles from the ſhore, and the ſnow and ice accumulated to the depth of thirty cubits. In this froſt, the animal and vegetable kingdoms ſuffered great injury. On the breaking up of winter, the ice from the Danube and the Euxine was forced in huge maſſes, into the Boſphorus, and againſt the walls of Conſtantinople, which were greatly damaged.

In March, falling ſtars, or meteors were very frequent, and the ſucceeding ſummers were remarkable for moſt terrible drouth, in which all ſprings were exhauſted. Myriads of venemous flies appeared, and a deſolating mortality concluded this ſeries of diſordered ſeaſons.

Paul. Diac. lib. 22. Baron. vol. 9. 271. Magd. Cent. 8. ca. 13. Short on Air, vol. 1. 82.

Short mentions a fatal peſtilence in Wales in 762.

On the authority of Short, I have mentioned a *mortality* after the ſevere and unuſual ſeaſons of 763 and 4; but the original writers I have conſulted do not mention it; tho the fact may be found in others which I have not ſeen. It is altogether probable that ſuch extraordinary ſeaſons ſhould occaſion great ſickneſs; but it is equally probable that if any deſtructive and general plague had followed them, the writers I have conſulted would have mentioned it.

I am led to notice this circumſtance, by the conſideration that no earthquake is recorded during this period. This circumſtance is of no ſmall conſequence in this inquiry ; and is a confirming proof of the juſtneſs of my ſuſpicions, that peſtilence has an intimate connection with ſubterranean heat or the action of fire. It appears that the plague, for the moſt part, is violent and extenſive, in proportion to the action of the fire that exiſts in and about the globe. The preceding peſtilential period, beginning in 740, is a ſtriking inſtance of the truth of this remark.

A great mortality happened in 766. In 767 a ſevere drouth exhauſted all ſprings and rivers and the year following was diſtinguiſhed by a comet. Peſtilence prevailed in England in 771, and in Chicheſter died 34,000 people.

Short vol. 2. 208.

Short mentions plague and famin in France in 779—a comet, an earthquake at Conſtantinople, and peſtilence in Scotland in 784 ; but I have no particulars.

In the reign of Charlemagne, about the beginning of the ninth century, commenced a period of great mortality. A comet in 799, was followed by an exceſſively cold winter in 800. Theſe events were preceded by violent earthquakes in Sicily and Crete and in 798, an extraordinary darkneſs in England of ſeventeen days. In 801 earthquakes ſhook Italy, France and Germany, and theſe phenomena were repeated in 802 and 3. A prodigious tempeſt in the year 800, levelled a multitude of buildings.

In 802 the plague prevailed in various places, " propter molitiem hyberni temporis," ſays the annaliſt Bartianus, by reaſon of a mild winter. This however could not be the true reaſon.

In 808 a very mild winter was followed by the plague. In 810 happened the greateſt mortality among horned cattle that is on record. In ſome places in Germany, it deſtroyed almoſt all the ſpecies.

Lancifius 146. Annal. Fuldenſes 810.

In 811 ſwarms of locuſts from Africa invaded Italy and devoured every green thing.

In 812 appeared a comet, and after a chaſm in the accounts of Etna of nearly four hundred years, that volcano is recorded to have diſcharged fire in this year. P. Diaconus places the comet in 813, and a violent earthquake.

Magd. Cent. 9. ca. 13. Muratori vol. 2. 505, 507.
Piſtorius' Germ. Script. vol. 2. 38.

In 817 was a comet, and a peſtilence ſoon after commenced, which authors relate to have ariſen from exceſſive rains and a humid air. This plague raged in almoſt every part of France in 820, and crops failing from exceſs of moiſture, a famin enſued. Baronius mentions earthquakes in 820 in thoſe places where the *Chriſtians were perſecuted.* The following winter was ſo ſevere that the Rhine and the Danube were covered with ſolid ice for more than 30 days, and ſuſtained loaded carriages.

In 823 was another moſt ſevere winter, in which the ſnow lay on the earth twenty nine weeks, and occaſioned the death of many animals and men. An earthquake and a univerſal plague in France. The next year fell a ſhower of hail, which killed men and cattle. Severe drouth the ſame year.

Magd. Cent. 9. ca. 13. Muratori, vol. 2. 513, 516. Short, vol. 2.

In 827 the Thames was covered with ice for nine weeks.

In 828 appeared a comet in Libra; and in 829, another in Ariès; with many meteors. The earth in France was violently ſhaken in 829; a violent tempeſt followed, but no peſtilence is mentioned.

Baron. vol. 9. 809. Magdeb. Cent. 9. ca. 13.

In 839 appeared a comet and another in 842. In 840 Conſtantinople was ſhaken for five days, and ſome parts of France felt the ſhock. The rains were exceſſive, the Rhine overflowed, and the ſtorms of hail and wind were unuſually ſevere.

Magdeb. Cent. 9. ca. 13.

In 850 another comet is mentioned, and in the following year a moſt ſevere drouth, which occaſioned a famin that compelled men to feed on human fleſh.—There was a ſevere earthquake in Gaul the preceding year.—A peſtilence in many parts of Scotland in 853.

Baron. vol. 10. 73. Magd. Cent. 9. Muratori, vol. 2. 531.

It will be obſerved that no peſtilence is noted under ſome of theſe laſt inſtances of comets and other phenomena. Hiſtory, during the dark and barbarous ages under conſideration, is extremely barren ; and the ſmaller calamities of all kinds have been paſſed over in ſilence. Whether any conſiderable mortality prevailed, at theſe periods or not, we cannot determin from the ſilence of the dull annals of the dark ages.

In 855 an earthquake at Conſtantinople, and in other places, violent tempeſts. In 856 another earthquake and a tremendous inundation of the Tyber, which was followed by an epidemic diſeaſe, called a plague of the fauces, in which the throat was obſtructed by defluxions, and ſudden death enſued.* In 858 a comet, and the ſucceeding winter was ſo ſevere that the Adriatic ſea was covered with ice and people walked on it to Venice. This was followed by an earthquake in Conſtantinople.

Muratori relates that in 855, two unuſual ſtars appeared for ten days, alternately, and that the next year the winter was very ſevere, dry and peſtilential, ſo that a great portion of men periſhed. But I ſuſpect he refers to the ſame years mentioned in the preceding paragraph.

Baron. vol. 10. 131. Muratori vol. 2. 534. Short vol. 1. 85.

The plague was in Scotland in 863.

The winter of 864 is recorded as very ſevere. In 867 there were violent tempeſts, and in the following year a general famin in Europe, ſevere earthquakes and a comet.

Magd. Cent. 9. ca. 13.

In 872 a comet, and a moſt exceſſive heat and drouth, which cut ſhort the grain.

Ibm.

In 874 appeared in France myriads of graſs-hoppers or locuſts of a remarkable ſize, with ſix feet and two teeth harder than ſtone. They are repreſented as having leaders, which went before them a days journey, meaſuring a certain ſpace ; the ſwarm followed about 9 o'clock and there waited for the riſing of the ſun, obſcuring the heavens by their numbers, and with a broad mouth and large inteſtines, devouring every green herb and tree. Their days journey was four or five miles.

Theſe animals were at laſt driven into the Britiſh channel by the winds, and being waſhed aſhore, their putrefying bodies cauſed a ſtench, and ſickneſs, which, with a pinching famin, deſtroyed a third of the people, on the neighboring French coaſt.

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* A ſpecies of quinſy.

The ſucceeding winter, 875, was terribly ſevere and continued from November to the vernal Equinox.

In this or the following year, for authors differ, appeared a comet of extraordinary brightneſs, and in June following, were deluges of rain, which, in Saxony, ſwept away a whole village, with its inhabitants and cattle.

In the year 878 a mortal peſtilence raged among the cattle, eſpecially about the Rhine. Dogs and birds which at firſt collected round the dead bodies, ſuddenly diſappeared.

Magd. Cen. 9. ca. 13. Piſtor. Germ. Hiſt. vol. 2. 570. vol. 1. 63.

In 879 there was an eruption of Veſuvius.

In Feb. 882 appeared a comet with a vaſt coma preceded in January by an earthquake. In the next year Italy was ſeverely afflicted by famin. In 884 the plague was in Oxford.

Magd. Cent. 9. 13. Short. vol. 2.

In 887 the winter was unuſually long and ſevere; and a peſtilence among cattle was ſo mortal, that few ſurvived it.

Muratori, vol. 2. p. 92.

A comet is noted under 896, and a famin in France and Germany, in the following year.—Italy was ſhaken by earthquakes.

Dufreſnoy. Baglivus.

In May 904 appeared a comet, followed by a ſevere froſty winter of four months, and violent earthquakes with mortal peſtilence in 905.

Univerſal Hiſt. vol. 17. 87. Magd. Cent. 10. ca. 13.

In 912 appeared a comet of unuſual ſplendor and the following winter was very cold "acutiſſimum fuit frigus," and meteors in the air very frequent. A famin followed in Germany, and Italy experienced earthquakes.

Magd. Cent. 10. Short. vol. 1. Baglivus. p. 542.

The plague was in Scotland in 922.

Short. vol. 2.

A ſevere winter in which the Thames was frozen for 13 weeks in 929, followed by a dreadful famin, is mentioned by the laſt cited authors. An earthquake is mentioned in 935, and a peſtilence in 937, but no details, In 940 there was a ſevere winter and peſtilence among cattle.

In 942 and again 944 appeared a comet, the latter very large with a brilliant coma; followed by ſevere famin in France and Italy. Some authorities place the latter comet in 945. The winter of 946 or 7 was long and ſevere, continuing to the vernal equinox of the next year.

Magd. Cent. 10.—Piſtor. Germ. Script. vol. 1.

The ſame period was marked by earthquakes in France and Germany.

In 954 peſtilence invaded the north of Europe, with great deſtruction—Scotland loſt forty thouſand inhabitants. The following winter was ſevere.

Baron. vol. 10. 739.—Magd. Cent. 10.

In 961 a flame or fiery column appeared in the heavens. In 962 a very ſevere winter and a famin. In 964 a dreadful plague in the Emperor Otho's army. In 968 a comet, an earthquake and violent winds which deſtroyed the grain and occaſioned famin.

Baron. vol. 10. 771. Magd. Cent. 10. Piſtorius, vol. 1. 134.

Engliſh authors mention a malignant fever in London in 961; at which time there was a large marſh on the ſouth ſide of the Thames.

Maitland's Hiſt. London.

In 975 appeared a very large comet in harveſt, and the following winter was exceſſively ſevere. The next year England was afflicted with grievous famin. An earthquake preceded, in 974.

Magd. Cent. 10. ca. 13. Simeon Dunelmenſis.

In 981 a comet and in 983 another. In this latter year was an eruption of Veſuvius. Univerſal famin followed and a plague among the Lacedemonians.

Baron. vol. 10. 831. Magd. Cent. 10. 13.

This period was followed by deſolating earthquakes in Lacedemon in 986.—In 987 the ſeaſon was unfavorable and occaſioned dearth—malignant fevers prevailed in England and the cattle died of fluxes.

Brompton, Angl. Scrip. 878.

Meteors and a flaming ſky were obſerved in 993, in which year was a great eruption of Veſuvius. Then followed an exceſſively ſevere winter, which laſted from November to May. The rivers were frozen dry, fiſh periſhed and a ſcarcity of water enſued. In July a ſevere froſt gave to the trees the gloomy aſpect of winter.

With theſe ſingular ſeaſons prevailed a famin and a deadly plague among men and cattle.

In 995 a comet was ſeen. The Saxon Chronicle places the foregoing events three years earlier.

In 996 an epidemic flux prevailed with great malignity in England.

The events here related are ſimilar to what are common at the preſent day; a volcanic diſcharge of fire being followed by unuſual cold and ſnow. Meteors alſo are common near the time of ſuch diſcharges.

Magd. Cent. 10. 13. Baron. vol. 10. 877.

Hitherto our accounts of the great volcanoes have been very imperfect. The firſt inſtance of an eruption in Iceland, which is recorded, was in the year 1000; and from that period we have a regular hiſtory of volcanic diſcharges in that iſland, which is one of the principal outlets of fire on the globe, and which, we ſhall find, has no ſmall connection with the extenſive and powerful operations of fire, both in Europe and America. There are many volcanoes in the iſland of which Heckla is the principal.

In the year 1000, there was an eruption in Iceland, two globes of fire or great meteors were ſeen, violent earthquakes in England, and a ſevere winter followed. In the ſame year appeared a comet with a long coma.

In the year following a flux, and fevers with a burning ague, were epidemic and mortal in England.

Magdeb. Cent. 10. 13.

The next period of general peſtilence was remarkable for its extent, violence and attending phenomena.

In 1004, an eruption of Heckla in Iceland, with a violent earthquake announced the approaching calamity. In 1005 appeared a comet of frightful aſpect, and in the winter Italy was, for three months, convulſed by earthquakes. In the ſame year commenced a famin, and a plague of three years duration, which deſolated the whole earth. Cotemporary authors affirm that more than half the human race periſhed. The living were fatigued with burying the dead—" ut ſepelientium tædio, vivi ad huc ſpiritum trahentes, obruerenter cum mortuis." Such was the warineſs of thoſe that buried the corpſes, that the living before their breath had left their bodies, were tumbled into the graves with the dead.

At the cloſe of this horrible deſtruction, Veſuvius diſcharged prodigious quantities of lava which laid waſte the neighboring country.

In 1009 was ſeen a comet in May. The beginning of the year the earth was deluged with rain, and a plague among the Saxons followed.

The plague is alſo mentioned under the year 1012, with violent rains and inundations, followed by an earthquake in 1013. But the neceſſary materials for a detail are wanting.

Magd. Cent. 11. 13. Baron. vol. 11. 27. Muratori, Tom. 5. 55.

In 1015 appeared a comet, attended with violent tempeſts, and followed by famin in 1016. In 1017 another comet was ſeen, and the following year is noted as peſtilential. But I have no particulars.

In 1020 was ſeen another comet, and the winter was exceſſively ſevere, ſo that men periſhed with cold. This was followed by peſtilence, in which the bodies of the infected generated " ſerpents," ſays the hiſtorian; by which he probably means ſome ſpecies of worms. A ſimilar fact will be related from Thuanus in the 16th century.

In 1021 was an earthquake, and the next year, the drouth and heat were extreme.

In 1025 the ſummer was wet. The plague raged in England, and in other parts of Europe, peſtilence with violent earthquakes.

Magd. Cent 11. 13.

In 1029 was an eruption of Heckla, and peſtilence in ſome parts of Europe.

A comet in 1031 was accompanied, in its paſſage, through the ſyſtem, with great ſtorms of wind and rain, producing vaſt inundations. In France, England and the eaſt raged famin and peſtilence. Locuſts were added to theſe calamities, which were ſo ſevere in ſome parts of the world, that multitudes were compelled to leave their country. Violent earthquakes marked this year, and what is uſual in the tempeſtuous ſeaſons occaſioned by comets diſtinguiſhed by volcanic eruptions, a ſplendid meteor, or globe of fire.

During an eclipſe of the ſun in 1032 or 3, authors mention a ſingular phenomenon—a ſaffron color in the air, which gave to the human countenance a cadaverous aſpect. But it might be merely the effect of a partial darkneſs, with a hazy atmoſphere.

A ſevere winter in 1035, was followed by an eruption of Veſuvius in 1036. The frequent coincidences of this kind deſerve notice.

In 1037 is noted an igneous appearance in the heavens, like a beam. Theſe phenomena were followed by peſtilence in England and in the Emperor's army, and with earthquakes.

Magd. Cent. 11. 13. Univ. Hiſt. vol. 17. 166.
Echard's Rom. Hiſt. vol. 5. 146.

In 1042 commenced another diſtreſſing period. A comet in this year was followed by an eruption of Veſuvius in 1043 and ſnow in harveſt. The year 1042 was very tempeſtuous and rainy; the dykes in Flanders yielded to the ſwelling ocean, and the low grounds were overwhelmed, with infinite deſtruction. At this time began a general famin in England, France and Germany. The year 1043 was alſo diſtinguiſhed for rains and ſtorms; autumnal ſnows were early, and an infectious diſeaſe carried off vaſt numbers of cattle. In 1044 there was great mortality among men.

In 1047 fell a deep ſnow in the weſt of Europe, which overwhelmed ſmall trees, and lay till March. In March 1048 was a violent earthquake, followed by a tempeſtuous ſeaſon and great ſickneſs. There was an eruption of Veſuvius the ſame year, and an earthquake in October. The reader will remark a very regular connection between eruptions of volcanoes and violent winds.

Magd. Cent. 11. 13.

During this period the countries about the Helleſpont were, for three years, ravaged by locuſts.

In 1052 a tempeſt is noted which demoliſhed many buildings. In 1053 a comet which was followed by a famin. But the ſeaſons are not deſcribed.

In 1057 ſevere froſt and great quantities of ſnow ruined the vines. During the following year, a comet was ſeen, the year after which the winter was very long and ſevere, and in 1060 prevailed famin, and plague among men and cattle.

In 1062 a trembling of the earth in Conſtantinople, attended with thunder and lightning, was ſucceeded by the plague. The next year was diſtinguiſhed by a comet, viſible 40 days, a tempeſt of four days, deep ſnow, and extreme cold, which proved fatal to vines, trees, birds and cattle.

In 1065 ſeveral hundred thouſand Scythians, marching to invade the Roman empire, periſhed with peſtilential diſeaſes.

In 1066 a comet was ſeen in May, and a cold winter ſucceeded. Egypt and Arabia, countries not ſubject to earthquakes, were violently convulſed in November, and a plague ſpeedily followed, which, authors affirm, ſwept away one half the inhabitants. This was attended with famin.

The north of Europe ſpeedily felt ſimilar calamities. Violent earthquakes in 1068, and a comet in May, of apparent diameter equal to that of the moon, viſible 40 days, were ſucceeded by famin. The country in England from Durham to York was depopulated. Men ſubſiſted on dogs, cats and every unclean thing; or periſhed and their bodies were left to putrefy on the earth. The winters were unuſually ſevere.

Magd. Cent. 11. 13. Murat. vol. 5. 44. Baron. vol. 11. 370.

In 1074 another comet appeared and a hard winter. The winter of 1076 was exceſſively cold from Nov. to March, ſo that the roots of vines were killed. In April 1077 appeared a comet, and famin and plague raged in Conſtantinople with ſuch mortality, that the living could not bury the dead. An earthquake was experienced in England. Shocks were alſo felt in 1081 and 1082.

In 1084 raged famin and peſtilence; the latter cut off the whole army of the Emperor Henry, in Rome. In 1085, Ruſsia was laid waſte by locuſts and the plague. The ſeaſons were unfavorable in England, the crops bad and a great mortality among cattle. In 1086, were great inundations in Flanders, Italy and other countries; and in 1087 the fiſh died in the rivers.

Magd. Cent. 11. Baron. vol. 11. 564. Stowe's Annals. Knighton. Hiſt. Ang. Script. 2353.

Authors relate that in 1086, domeſtic fowls left the houſes and fled to the woods. The two following years, the ſame calamities continued—bad ſeaſons, murrain among cattle, and a violent fever, which appeared in the former year, raged in theſe and affected one half the people of England. In 1089 a burning plague deſtroyed mankind. Earthquakes diſtinguiſhed theſe periods.

Functius Chro. vol. 1. 102.

In 1091 appeared a comet; another in 1094; a third in 1096, and a fourth in 1098.

In 1091, many violent tempeſts happened which levelled buildings, 600 houſes were blown down in London; ſwarms of locuſts darkened the ſun, and the next year a plague raged, which the hiſtorian relates to have ariſen from the putrefaction of their bodies. The place where the locuſts appeared is not named.

A moſt ſevere winter in 1093, occured after a very rainy ſummer in England. The ſummer of 1094 was alſo exceſſively rainy.—The plague at the ſame time raged in England, Gaul and Germany. A violent earthquake with a tempeſt in 1094. The comet in Oct. 1096 was attended with great rains, which prevented the ſowing of winter grain, and famin followed. Various fiery appearances and meteors were obſerved, during this period, and the winter of 1095 was ſevere.

In 1098 a peſtilence invaded cattle, from the bad quality of their food, which had been injured by great rains. This was the year of the laſt comet above named, and in the following year, was a hard winter and a dearth. Syracuſe was injured by an earthquake.

Magd. Cent. 11. 13. Matthew Paris, p. 17. Muratori, Tom. 5. 59.

To the year 1099 or the following, is to be aſſigned the terrible inundation which ſpread over the low lands in Kent, belonging to Earl Goodwin, and which, never having been recovered, now form the ſhoals, called Goodwin Sands, of dangerous navigation.—A ſevere winter followed, and peſtilence and famin in various places.

Piſtorius, vol. 1. Anderſon, Hiſt. Com. vol. 1. 176.

It is probable that the events related in the two laſt paragraphs happened in the ſame year. The inundation is ſaid to have drowned in Holland one hundred thouſand people.

A dark day is mentioned in the year 1099.

In the year 1100 raged a peſtilence in Paleſtine, ſaid to have originated from the ſtench of dead bodies. In Syracuſe, a violent earthquake demoliſhed a tower, with the loſs of many lives. In 1101 a ſingular meteor, and ſuch multitudes of worms, called *papiliones*, from their reſemblance to a pavilion, that they covered two or three miles of country.

Magd. Cent. 12. ca. 13.

In 1103 a new ſtar ſhone for twenty-five days, and a comet of a bright flaming color.—A great mortality happened this year.

Magd. ibim. Matthew Paris.

In 1105, there was a diſcharge of fire from Heckla, and in the ſame year, a great quantity of ſnow, a violent earthquake in Jeruſalem, about Chriſtmas, and about the ſame time, a light in the weſt almoſt equal to the ſun, and two mock ſuns.

In Feb. of the following year, a comet* of unuſual ſplendor for three weeks was viſible from three to nine o'clock, and two mock ſuns. A violent earthquake happened the ſame year. Many meteors were ſeen and violent tempeſts and inundations, with myriads of inſects in the air, marked the diſorder of the elements.—The year was alſo noted for ſterility of grain, and a conſequent dearth—men were attacked with plague and unuſual diſeaſes—" ignotis morbis, igne, flamma, ardore inviſibili homines excruciati et abſque ad uſtionis nota extincti."

Magd. Cent. 12. ca. 13. Muratori, Tom. 5. 485.

The reader cannot fail to remark how regularly the mention of comets is accompanied with a failure of crops, meteors, and tempeſts. We have proof in modern times that theſe were not the fictions of imagination. See the years 1769-70—1783-4—1788-9.

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* Suppoſed to be the ſame as that which appeared in 531 and in 1680.

In 1107 appeared a comet with a long coma—another was ſeen in Normandy in 1108.

In the year 1109 eryſipelous diſeaſes were epidemic in England; which afflicted and deſtroyed many people; their limbs covered with black ſpots, like carbuncles.

Magd. Cent. 12. ca. 13. Sigebert. Polydore Virgil.

In December 1109 appeared a comet, and in June 1110 another, which ſpread its coma to the ſouth. A ſevere winter, with deep ſnow and long continued cold, followed and ſterility of grain. An unuſual receſs of water in the Trente, ſevere earthquake in Salop, and a mortality among men and cattle diſtinguiſhed the year 1111.—An earthquake and ſevere plague are mentioned under the year 1112; but the year was remarkable for abundant crops of grain.—This year there was an extraordinary receſs of the water in the Britiſh Channel for a whole day, fiſh died in the water and domeſtic fowls took flight into the woods.

Magd. Cent. 12. ca. 13. Knighton, Hiſt. Ang. Script. 2379.

Here we have an account of a progreſſion in the peſtilence—from the eruptive diſeaſes of 1109 to the plague in 1112—This is the modern order.

In 1113 or, as ſome authorities have it, in May 1114, a comet appeared, and in a period of diſtreſſing calamities. In this year there was an eruption from Heckla in Iceland.

In May 1113 an extraordinary ſnow very much injured trees and vegetables. In June a dreadful tempeſt laid waſte whole countries, and the exceſſive heat of the ſummer produced dyſentery and other peſtilential epidemics. In 1114 many cities in Syria were proſtrated by an earthquake; and its effects were felt in all the oriental countries. In November 1115 many houſes in Antioch were ſwallowed up in a chaſm rent in the earth. In January 1116 various places ſuffered by ſhocks of the earth, and in 1117 all Italy was ſhaken for forty days.

In 1113 Flanders was overwhelmed by an inundation, which compelled many Flemmings to abandon their country, and they ſettled in England.

This event ſeems to fix the approach of the comet in the year 1113.

Severe drouth and a ſingular receſs of the ocean left rivers dry in 1114. October 15th people walked over the Thames between London bridge and the tower. In December the ſky appeared to be in a flame.

The winter of 1115 was moſt rigorous, and a terrible mortality ſwept away the cattle. A comet appeared this year alſo.

The year 1116 was rainy and fruits were deſtroyed. In 1117 ſwarms of locuſts about Jeruſalem devoured vegetation, and in England great damage was done by floods.

In 1118 and 1119 earthquakes were violent. In 1120 the locuſts and mice overran Judea, and Trent ſuffered much from earthquakes. A ſevere winter followed in 1121, and a drouth the next year, which occaſioned a ſcarcity of proviſion, and men and cattle periſhed.

In the foregoing period, no great peſtilence is mentioned, but ſuch diſeaſes as were occaſioned by intemperate ſeaſons, except among cattle.

Magd. Cent. 12. Baron. vol. 12. 117.
Muratori, Tom. 5. p. 60. Maitland's Hiſt. Lond.

In 1124 happened a very ſevere winter, which deſtroyed trees and vines—ſucceeded by a cold ſpring which retarded vegetation. The following year was noted for a deſtructive plague among men and cattle, in France and Brabant. Terrible was the famin in Italy, and in England ſo many people periſhed with hunger, that dead bodies lay in the highways unburied. In 1125 the famin, accompanied with peſtilence, continued in England, Germany and Italy. The ſeaſon was exceſſively wet and all fruits were injured or deſtroyed. In 1126 appeared a comet in October, followed by a winter exceſſively ſevere, and in the following year, violent earthquakes occurred in Syria. Eryſipelous diſtempers were fatal in England.

In the peſtilence of 1125, it was computed that one third of the people periſhed.

Magd. Cent. 12. Baron. vol. 12. 160. Dufreſnoy.

In 1130, 31 and 32, happened the moſt deſtructive murrain among cattle and fowls ever known in England. In 1131 an exceſſive drouth in France.

In October 1133 appeared a comet. The ſame year, England was ſhaken by earthquakes, and inundations continued a whole month. Authors aſſert that the ſun exhibited ſingular appearances, changing its figure and dimenſions, and that there was a remarkable intemperature in the air. In modern times, the face of the ſun is often disfigured with ſpots, and it is not unphiloſophical to ſuppoſe that moving vapor in the air may ſuddenly change its apparent diameter.

In 1134 the ſea broke into Flanders, as it did in the following year. This year was rainy.

In 1135 the drouth deſtroyed vegetation and occaſioned a dearth. The Rhine was fordable in almoſt any place. Terrible tempeſts and earthquakes and an eruption of Veſuvius marked this period, and a dreadful plague enſued.

Short, vol. 1. 118.

The eruption of Veſuvius was in 1136 and a ſecond in 1139. The ſummer of 1137 was as remarkable for drouth, as was that of 1135. The plague was univerſal. The diſorders in the elements occaſioned a long and deſolating famin.

Magd. Cent. 12. Piſtorius, vol. 1. 156. Matthew Paris.

Knighton mentions the ſun's changing its form in 1133, and adds that a darkneſs happened which rendered a candle neceſſary in the day time.

Chronocon.

From this it is probable the ſun preſented appearances, like thoſe which we obſerved on the 19th of May 1780, and which are uſual in dark days.

The reader will remark the occurrence of ſuch days, in years when electricity ſhakes the earth, or fire and lava are diſcharged by volcanoes. He will note alſo the drouth that preceded the eruption of Veſuvius in 1135 and 1138.

In 1140 was an earthquake in England. In 1141 a very ſevere winter. In 1143 the air, for a mile in extent, was filled with an unuſual inſect, with the body of a worm and the ſize of a fly. A general plague among men and cattle began the ſame year, and raged with great violence in various countries.

In 1144 or as ſome authors relate in May 1145 appeared a comet, illuminating the heavens, and the ſame year were violent earthquakes. In 1146 another comet, and the plague incredibly fatal. A famin prevailed with diſtreſſing ſeverity, for 12 years, including the years juſt named.

Magd. Cent. 12. Muratori, Tom. 5. p. 65.
Piſtorius, Germ. Script.

If men, at this period, had any reſpite from natural evils, the intervals were very ſhort. In 1150 a very ſevere winter and ſevere peſtilence are recorded in the Saxon chronicle, together with famin and an eruption of fire in Iceland. Earthquakes, inundations and peſtilence marked the ſubſequent years. The years 1151 and 2 are mentioned to have been very rainy—the winter of 1153 and 4 ſevere, and the ſummer of 1156 exceſſively dry. Theſe phenomena follow each other ſo rapidly, and are related with ſuch brevity and in general terms, that it leaves the mind at a loſs to what influence to aſcribe the diſeaſes which afflicted nations for a ſeries of years about this period. In this gloomy and barbarous age of the world, hiſtory is conciſe and deſtitute of accurate obſervations.

In 1157 there was an eruption in Iceland, with a very cold winter. In 1158 an eruption of Veſuvius, an earthquake in England, and an inudation of the Tyber. Peſtilence appeared in Scotland in 1154.

Not long after theſe events, Antioch, Tripoli, and Damaſcus were convulſed by an earthquake, with the loſs of 20,000 lives.

After an interval of more than 300 years, during which I find in hiſtory no account of any eruptions from Etna, this volcano is introduced to our notice by an almoſt continual eruption from 1160 to 1169. Earthquakes were violent in 1161—in Sicily an inundation drowned 5000 people—in 1163 one of the greateſt inundations in Frieſland ever known, preceded by a very ſevere winter. At this time the plague was raging in Milan, Normandy and Aquitain. Unuſual darkneſs is mentioned in 1164. In England, the ſea overflowed twelve miles of country, deſtroying men, cattle and improvements. In 1165, a comet appeared with a long coma; 12,000 people periſhed by an inundation in Sicily, and Norfolk and Suffolk in England were ſhaken by an earthquake. Moſt of Frederick Barbaroſſa's army periſhed by the plague in 1167. This period was remarkable for great wind and hail.

In 1169 the eruption of Etna was very violent; Catana was demoliſhed by an earthquake, and 15,000 people periſhed —Aſia Minor felt the ſhock. In the next year, ſo general and tremendous were the earthquakes, that many of the beſt cities in Syria, Paleſtine and other countries, were laid in ruins. Germany ſuffered by earthquakes and inundations. Peſtilence marked this period, and in 1172 a malignant dyſentery raged in England.

In 1174 mention is made, for the firſt time, of an epidemic cough or catarrh. There is however no queſtion that influenza and meaſles always preceded or accompanied peſtilence in the ancient and middle ages, as they do in modern times. Authors have neglected to record the prevalence of all the minor epidemics, or nearly all, until after the invention of printing.

In 1175 hiſtory mentions an eruption of Etna, peſtilential diſeaſes in England and a famin. In 1176 a long and ſevere winter, and an irruption of the ſea into Holland with immenſe deſtruction—a ſevere drouth followed with a loſs of ſeed time. The year 1177 was diſtinguiſhed for violent winds.

In 1178 a comet was ſucceeded by a moſt rigorous winter, and deſtructive inundations. On the 11th of September, was a dark day, with ſingular appearances of the ſun and moon. Another comet is mentioned in 1179 and a great hail ſtorm.

In 1181 appeared a comet, and earthquakes, with an eruption of Etna, marked this period.—At this time Denmark was almoſt laid deſolate by exceſſive rains, famin and peſtilence, while Germany loſt half of its inhabitants by the plague. Some allowance muſt be made for exaggeration in the accounts of the more deſtructive plagues. This was an age of ſuperſtition, and the imaginations of men were ſuſceptible of ſtrong impreſſions.

In 1185 is recorded a moſt violent earthquake, over Europe. Calabria was overturned, and thouſands periſhed. On the Adriatic, a whole city was ſwallowed up, and the ſhock was felt to the Baltic.

In 1186 Ruſſia and Poland were deſolated by locuſts and peſtilence. The winter was ſo mild, that the following harveſt was in May, and vintage in Auguſt. In Carinthia, the locuſts devoured every green thing.

An unuſual conjunction of planets happened, this year, in Libra ; and ſo great was the alarm, in that ignorant and credulous age, on account of the calamities predicted by aſtrologers, that a ſolemn faſt of three days was appointed by the Archbiſhop of Canterbury. Luckily no uncommon event happened in England, until the next year, when peſtilential diſeaſes prevailed among men and cattle. In 1188 the plague was in Rome.

Magd. Cent. 12. Murat. vol. 5. p. 70—6—182.
Univ. Hiſt. vol. 32. 110. Henry Hiſt. Brit. vol. 3. 380.

I have no accounts of comets in this period from 1181 to 1211 ; altho it is probable that ſeveral were viſible.

How far may we ſuppoſe the conjunction of all the planets had any influence in producing the remarkably mild winter of 1186?

In January 1193 was a remarkable aurora borealis.

In 1193 and 4 exceſſive rains injured the grain and produced a dearth. In England an acute peſtilential fever was epidemic and left in health ſcarcely a number of perſons ſufficient to tend the ſick. The uſual forms of burial were neglected, and dead bodies were thrown into graves in piles. A ſevere winter put a ſtop to this epidemic. Brompton, with a natural partiality for religious houſes, informs us that the only places exempted from the deſtruction of this peſtilence, were the monaſteries—Cotemporary with this diſeaſe was an earthquake and a ſingular fiery appearance in the ſky. Short places this fever under the year 1196 and calls it a "burning ague." See the years 1001 and 1723.

Brompton's Hiſt. Ang. Script. 1271. Magd. Cent. 12.
Short, vol. 1. 130.

The winter of 1200 was cold; the ſummer of 1201 was very rainy; and the winter ſucceeding was ſevere almoſt beyond example. In 1203 was a ſore famin from bad ſeaſons. In 1205 a rigorous winter and a great hail ſtorm; in 1206 an eruption of Heckla; but I have no account of any epidemics that prevailed.

In 1210 was an eruption of Heckla, and a cold winter. In 1211 appeared a comet, in May, viſible for 18 days. Great tempeſts marked this period with inundations. In 1212 Venice and Damaſcus were violently agitated by earthquakes, and in Sicily thouſands periſhed by an inundation. Theſe phenomena were the heralds of a ſevere peſtilence, which, in 1213, was ſo fatal in Italy, that authors affirm ſcarcely one tenth of the inhabitants ſurvived. In the year following appeared two comets.

The year 1219 was diſtinguiſhed for the approach of a large comet, diſtreſſing inundations, in one of which periſhed 36,000 inhabitants, an earthquake and a volcanic eruption in Iceland. In 1220 the plague was ſo fatal in Damietta, that authors relate three perſons only ſurvived out of 70,000. By this we are to underſtand the diſeaſe to have been extremely mortal; but we muſt reject the literal meaning of ſuch relations. It is doubtleſs true that the peſtilence of this period has rarely been exceeded in mortality.

This period was very calamitous in the north of Europe. In 1221 Poland was afflicted by exceſſive rains, and the floods which followed ſwept away whole villages. The winter ſucceeding was ſevere, ſo that frozen wine was ſold by weight, while famin and peſtilence almoſt deſolated Europe. In moſt countries, the living could hardly bury the dead; and in ſome cities, ſcarcely a perſon ſurvived.

In the year 1222 appeared a comet of unuſual magnitude and the ſummer was exceſſively dry. A froſt, with deep ſnow in April, deſtroyed the fruits. In autumn the earth was deluged with rains and ſwept with violent winds. An earthquake ſhook Germany and Lombardy; in Cyprus two cities were demoliſhed; the ſhocks were frequent and continued for two months, in Brixia, Venice, England and other countries. The plague raged, for three years, with uncontrolable fury, in Germany, Hungary, France and other countries; falling on cattle as well as man.

During this dreadful period, the diſcharges of fire and lava, from the volcanoes in Iceland, exceeded what had been before known in the ſame ſpace of time. There were two eruptions in

1222, one from Heckla; the other from Reikeneſe; and the eruptions of the latter were repeated in 1223, 1225 and 1226. In 1224 was a ſevere drouth; in 1225 a rigorous winter, followed by a dearth, and mortal diſeaſes among ſheep.

Let any candid man obſerve the natural phenomena accompanying this deſolating period, from 1219 to 1226; and decide for himſelf how far the fire or electricity of the ſyſtem is an agent in producing them, and the attending diſeaſes.

We obſerve here the progreſs of peſtilence to be the ſame as in modern times. The plague appeared in Egypt almoſt at the ſame time with the comet, and firſt derangement of the elements in 1219 and 1220; but was two, three, four and five years later in the high northern latitudes.

No comet is mentioned in the hiſtories of this dark period, as far as I can find, from 1222 to 1240; but that there was one, in the vicinity of the earth, between 1228 and 1233, is very probable.

In 1228 an inundation in Frieſland demoliſhed whole towns, and it was eſtimated that 100,000 people periſhed. Great rains in ſummer and exceſſive heat were followed by a ſevere winter, with deep ſnow.

In 1230 the waters of the Tyber roſe to the ſtairs of St. Peter's Church, and drowned the lower city. July and Auguſt were exceſſively hot. An inundation of the Danube in 1232, and in 1233 ſo ſevere a froſt, that rivers were converted into highways in Italy; and earthquakes marked the year, with a dark day.

During this period from 1230 to 1233, France, Denmark and Italy were waſted by dreadful famin and plague. Theſe calamities continued in 1234 and 5, in England and France. In London alone 20,000 people were ſtarved. Worms and locuſts devoured the fruits of the earth.

The winter of 1236 was rainy—the following ſummer extremely dry, and in England moſt diſtreſſing agues were epidemic. In 1237 was an eruption of a volcano in Iceland.

In 1239 peſtilence again raged—a new ſtar, like Lucifer, appeared. Famin was ſo ſevere that perſons fed on human fleſh, In 1240 a comet appeared in Feb. and was viſible a month. Mortal diſeaſes prevailed, and authors relate that the fiſh, on the Engliſh coaſt *had a battle*, in which eleven whales and a multitude of other fiſh were ſlain and caſt aſhore. The cauſe to which this phenomenon is aſſigned is laughable enough; but the fact is important; for it ſtrengthens modern obſervations, that when peſtilential diſeaſes prevail on the ſurface of the earth, fiſh often periſh beneath the water. Of this no doubt can remain; and this alone demonſtrates that the *peſtilential cauſe* is as powerful or nearly ſo, at the bottom of rivers and the ocean, as on the earth—a fact that reduces the theory of propagating the fomes of epidemic diſeaſes in veſſels, clothes and ſimilar articles, from one country to another, to a thing of very trifling conſideration.

The winter of 1240 was very ſevere—the ſnow was deep and cattle periſhed. An eruption of fire in Iceland is noted the ſame year.

In 1242 the Thames roſe by means of exceſſive rains and overwhelmed the country for ſix miles about Lambeth. The years 1243 and 4 were remarkable for continued drouth, meteors and a moſt fatal plague.—An eruption of fire in Iceland in 1245.

In 1247 a violent earthquake was experienced in England, and in September a fatal plague. The earthquake was in February and followed by a very rainy ſummer. The winter following was ſo mild, that people wore their ſummer clothes; but from March to May was cold.

The ſummer of 1250 was rainy and tempeſtuous, followed by a hard winter. The ſummer of 1251 was intolerably hot, and epidemic diſeaſes prevailed, with great mortality.

In 1252 late froſts in ſpring, and ſucceeding drouth deſtroyed the fruits of the earth. At the cloſe of July came great rains, vegetation ſtarted, but great mortality prevailed among cattle. At Michaelmas began the plague in London, which ſpread over England, and raged till Auguſt following. This is one inſtance of the plague's appearing in autumn, running through the winter, and ceaſing about the time, in the hot ſeaſon, when that diſeaſe uſually begins.

The winter of 1254 was rigorouſly cold, a murrain among ſheep was very fatal, and in England and France a mortal diſtemper among horſes called the *evil of the tongue*, but it is not deſcribed.

In 1255 appeared a comet; tides roſe to an uncommon height; rivers ſwelled with exceſſive rains and tempeſts levelled buildings. In 1256 the rains and tempeſts were equally violent, and another comet appeared. In 1257 the ſummer was alſo exceſſively rainy. From theſe rains came a dearth of corn in England and France in 1258, which was alſo rainy; and famin and diſeaſes made havoc with human life. Fifteen thouſand perſons periſhed by hunger in London; but I have no account that the plague prevailed at that time.

To this ſeries of wet ſeaſons ſucceeded ſevere drouth in 1259 and 1260; and the mortality continued till the ſummer of 1259—after which plenty ſucceeded to want.

The year 1261 was rainy in England and Scotland, and a dearth was the conſequence in the following year.

In 1262 an eruption of a volcano in Iceland.

In 1263 a ſevere froſt in winter converted the Thames into a highway for men and horſes. In 1264 a comet was viſible from June 20th to September 28th and peſtilential diſeaſes ſwept away horſes and cattle.

In 1266 ſwarms of Palmer worms devoured all vegetables in Scotland, and ſeveral villages on the Tay and Froth were ſwept away by floods. Theſe were preceded by a remarkable halo.

In 1268 appeared a comet, and violent tempeſts and rain are noted, together with ſterility of grain and dearth in Auſtria and Sicily.

In 1269 the winter was extremely ſevere; horſes and carriages paſſing on the ice over the Thames. A plague raged among the Cruſaders, on their march to the holy land, of which died the French king and his ſon. Some authors mention a comet of ſtupendous magnitude under this date; which is probably the ſame as that noted under the foregoing year.

In 1274 was a great earthquake and a comet of frightful aſpect—an earthquake alſo in 1275.

In this year, it is related, the rot among ſheep was firſt known in England. As this was ſaid to be an imported diſeaſe, it is proper to ſtate how it was introduced. Short on Air, vol. 1. 155, ſays, " This year, a rich Frenchman brought into Northumberland a Spaniſh ewe, as big as a two year old calf, which ſheep being rotten, ſoon infected the country, ſo that the diſeaſe overſpread the whole kingdom, and laſted 25 or 28 years, till it left very few ſheep alive. This was the firſt rot ever known in England."

The reader will judge which is the greater calf, the man who gravely tells or the man who believes ſuch a tale as this.

Hiſtorians fix upon the year 1277 for the formation of the Dollert Sea, between Groningen and Eaſt-Frieſland, by a great inundation, which overwhelmed 33 villages irrecoverably; with many farm-houſes in the open country.

In 1280 a great inundation was followed by a very cold winter. In 1281 Poland was afflicted with famin. The winter of 1282 was the ſevereſt then remembered; an earthquake ſhook Italy and a plague raged in Denmark. In 1283 the ſame malady prevailed in Scotland. In 1284 the winter was one of the mildeſt ever known; the year was alſo remakable for great tempeſts, an unuſual darkneſs and an eruption of Etna. The year 1285 was noted for a ſimilar darkneſs, moſt parching drouth and the commencement of a famin in England.

This drouth was followed in 1286, by the approach of a comet. In this year, Pruſſia was infeſted with a new ſpecies of worms, whoſe ſting was poiſonous. Swarms of flies and peſtilential fevers in Spain nearly deſtroyed the army of the French king, then making war on Arragon.

In 1287 fifteen iſlands in Zealand were overwhelmed by an inundation, with the loſs of 15,000 inhabitants.

In 1288 the ſummer was exceſſively hot and dry. Grain was however abundant in this and the preceding year. The drouth was followed by great mortality and a ſevere winter.

In 1293 a comet was viſible, and a great ſnow ſtorm happened in May. Italy was ſhaken by earthquakes. In the following year, England was diſtreſſed by ſevere famin, thouſands of the poor periſhing with hunger. A ſevere drouth exhauſted all the ſprings and rivers, graſs withered and cattle were fed on ſtraw. The winter of 1293-4 was extremely cold, and an eruption of Heckla happened in 1294.

In 1295 and 6 many countries were afflicted with famin, and in 1297 the plague prevailed in Scotland.

A comet of great magnitude appeared in 1298, or as other authors ſay, in 1299, and others in 1300; whoſe approximation was attended with violent earthquakes in Germany, and other places in 1299, and with an eruption of Heckla in 1300. The year 1298 was noted for a great mortality among the Jews, and multitudes periſhed in the eaſt with various diſeaſes in 1299.

In 1305 appeared a comet, attended with fatal peſtilence. A hard winter followed, and the Rhine was covered with ice.

In 1311 mount Heckla diſcharged its fiery contents; in 1312 appeared a comet, and a three years famin commenced in Bohemia and Poland, which was exceedingly diſtreſſing. Men became like wolves and preyed on human fleſh.

In 1314 inceſſant rains deſtroyed the grain; a comet appeared in December following, and in 1316 raged a deſolating dyſentery in England, accompanied with an acute fever, which, like the true plague, left ſcarcely ſurvivors to bury the dead. The famin continued to rage with all its horrors. Horſe fleſh was a delicious diſh. Wheat ſold at forty ſhillings the quarter; equivalent to £30 ſterling in theſe days.

In 1318 the winter was ſevere, and in 1319 the plague prevailed in England. A murrain ſpread among cattle, at the ſame time, with fatal deſtruction.*

In 1321 the drouth was extreme, and there was an eruption of Etna. Eruptions of Etna are alſo mentioned in 1323, 1329 and 1333, and a ſevere winter, in the firſt of theſe years 1323, which covered the Baltic with ice. The plague raged in 1325.

The year 1330 was rainy and the crops indifferent. The year following, Ireland was diſtreſſed by famin, but Dublin was relieved by plenty of fiſh, called Thurlheds, which had not been ſeen there for ages. In 1332 was an eruption in Iceland.

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* I have no account of any comets from 1315, to 1337—which may be owing to the defect of my hiſtorical materials.

In 1336 grain was abundant. A violent earthquake ſhook Venice, and a ſucceeding plague laid waſte the city. This was preceded by numerous abortions.†

In 1337 happened a ſeverely cold winter, without ſnow. Two comets were viſible, one four months, the other two. The plague prevailed in Nuremberg and other parts of Europe. The winter following was alſo ſevere. Piſtorius places theſe comets in 1336, and mentions an inundation at Florence. At this time, Europe was, for three years, ravaged with locuſts.

In 1339 or 40, appeared another comet. Great floods, an eruption of Heckla, and a ſevere winter followed, which covered the north ſea with ice.

See Short on Air, vol. 1. Piſtorius, vol. 1, and 2. Dufreſnoy's Chron. Henry's Hiſt. Eng. vol. 4. 500. Camden's Britannia. Functius' Chron. Knighton's Chron.

In travelling through the dark ages, we find but few intereſting deſcriptions; and nothing could have induced me to undertake the tedious detail of detached facts reſpecting peſtilence, but a ſtrong deſire to aſcertain all that can be diſcovered of the operations of nature, in producing epidemic diſeaſes. It is of infinite importance, in diſcuſſing this ſubject, to know whether certain phenomena of ſeaſons, of ſubterranean fire, and unuſual animals, uniformly attend peſtilence; and to aſcertain, if poſſible, the *order* in which they proceed, for the purpoſe of diſcovering whether they are connected with each other as cauſe and effect. Barren as the hiſtory of the barbarous ages really is, we yet find it to contain a great number of facts, that will aſſiſt us in developing the cauſes of epidemics. The ſubſequent periods of the world furniſh more ample materials—we now approach the morning of ſcience, when the clearer lights of more accurate hiſtory will illuminate our path.

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† To repair the waſte of population, the Senate paſſed a decree inviting perſons to come and reſide in the city, and promiſing them the rights of citizenſhip, after two years reſidence. Howel's Survey.

SECTION IV.

Hiſtorical View of peſtilential epidemics, from the year 1340, to 1500.

THE peſtilence next to be deſcribed was the moſt general and awfully diſtreſſing that the world ever experienced. The preciſe year when it appeared in Aſia, where it began, is not aſcertained; but probably about 1345, perhaps a year or two earlier.

The hiſtories of that age relate, that it commenced in Cathay, China, and was preceded by the burſting of a huge meteor or globe of fire; or as others relate, the fire burſt from the earth. Theſe accounts were taken from Genoeſe ſeamen, and are recorded by Villani; but Dr. Mead, with that obſtinacy that rejects truth when oppoſed to preconceived theory, thinks the report incredible, and queſtions not the diſeaſe originated in Egypt. Had he ever examined the ſubject, like an impartial man, he would have believed the account of the ſeamen, for there is not a more certain phenomenon in nature, than the appearance of meteors and the exploſion of fire in peſtilential periods.

Villani, book 1. ch. 2. Mezeray, Tom. 1. 798.

This plague appeared in 1346 in Egypt, Syria, Greece, Turkey; in 1347 in Sicily, Piſa, Genoa and other parts of Italy; in 1348 it appeared in the ſouth of France, firſt in Avignon, which is not a maritime city, but at a diſtance from the ſea, and afterwards in other parts of the kingdom and in all the ſouthern provinces of Spain. At the cloſe of the ſame year, it made its appearance in England, firſt in Dorſetſhire, and ſoon travelled over the whole country. In 1349 it overrun Ireland, Holland, Scotland, and in 1350 all Germany, Hungary and the north of Europe.

This peſtilence was remarkable for raging in winter as well as ſummer, even in the north of Europe. In France it firſt appeared at Avignon in February and prevailed there nearly a year.

Muratori, vol. 3. part 2. 588.

Short has placed its firſt appearance in the ſouth of England in September. But Archbiſhop Parker has placed its origin juſt after Chriſtmas. His words are, " Ea ſtatim poſt nativitatis dominicæ celebratum feſtum, ipſa nimirum hyeme et rerum omnium ad victum neceſſarium copia, cum vix ulla contagionis ſuſpicio oriri mortalibus potuit, incepit." " Immediately after the feaſt of our Lord's nativity, in winter and amidſt the greateſt abundance of proviſions, when there could be no ſuſpicion that a contagious diſeaſe would ariſe among men, the plague commenced." It raged about five months and according to this author ceaſed in May following ; altho other authors relate, that it had not gone through the kingdom till late in the ſummer.

Parker's Antiq. Brit. p. 360.

In the Engliſh Annals by William Wyrceſter, in the black book of the Exchequer, it is ſaid that this plague prevailed in the parts of London and its vicinity in autumn 1349.

Theſe different accounts of the time of the firſt appearance of this diſeaſe, are reconcileable on the principles which modern obſervations have unfolded. It is found that the plague is *always* preceded, for ſome months, and in ſome inſtances, for two or three years, by other malignant fevers, which increaſe gradually to the violence of the true plague ; and often the degrees of violence are ſo gradual, that phyſicians themſelves can hardly determin a line of diſtinction between the malignant diſeaſe, which is the precurſor of the plague, and the plague itſelf. That is, they are at a loſs to know where the malignant diſeaſe ends and the plague begins. Hence all the diſputes, at the commencement of a peſtilence, whether the *diſeaſe is the plague or not*—a circumſtance which appears to have marked the origin of all great plagues, and yet phyſicians and philoſophers in Europe ſeem never to have ſuſpected the cauſe.—Theſe facts will be hereafter demonſtrated, and they annihilate at a blow the whole doctrine of the propagation of that diſeaſe from country to country by infection.

From the uniform operations of nature in the caſe of epidemic peſtilential diſeaſes of the kind under conſideration, there muſt have been in England, during the ſummer, previous to the appearance of the plague, malignant fevers, which might approach to the violence and fatality of the plague. This circumſtance might create a ſmall difference in the accounts of the origin of the plague—inaccurate obſervers miſtaking the one diſeaſe for the other—or rather naming the previous putrid fever, the plague, before it put on the characteriſtic ſymptoms.

It is poſſible however that theſe authors may refer to the commencement of the diſeaſe in different parts of England.

This formidable calamity deſerves a particular deſcription, with all the phenomena attending it.

In 1347 appeared a frightful comet, in Auguſt. Preceding and during the prevalence of the diſeaſe, the whole earth was ſhaken by moſt tremendous earthquakes. All Germany was ſhaken in 1346. In 1349 on the 9th of Sept. Sicily was ſhaken to its foundation, together with all Italy. In Greece many cities were overthrown, and in many places towns and caſtles were demoliſhed. Thouſands of people were ſwallowed up and the courſes of rivers were obſtructed.

Over Avignon was ſuſpended a meteor or pillar of fire for an hour. The heavens were at times illuminated as with flame, and meteors were frequent.

I have no particular deſcription of all the ſeaſons, during the five years, in which this mortal peſtilence deſolated Europe. But the year 1347, the year of the comet, was, in England, exceſſively rainy, and the air humid.* Short, from Johan Cole de Billona, mentions that a hot air, cloudy and moiſt atmoſphere had continued for ſome years, and that a malignant, contagious peripneumony followed in all Europe. But unfortunately the compiler leaves us in the dark as to the preciſe time of its appearance, and whether before or after the other forms of this peſtilence.

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* Mutius, in the collection of German hiſtory, ſays that the whole year 1348 was ſoutherly, moiſt weather, but there were no heavy rains to cool the air. Fruit was abundant, but corn was not nutricious. See vol. 3. 241.—In England the rains continued from May to Chriſtmas.

Mezeray relates that in China, the diſeaſe originated from a vapor, which burſt from the earth, was horribly offenſive and conſumed the face of the country through an extent of 200 leagues. This account may be inaccurate, but is not to be wholly rejected. That ſome action of ſubterranean heat was inſtrumental in generating the diſeaſe, is very probable; or at leaſt that ſome phenomena of fire accompanied it, becauſe this ſuppoſition is conſonant to the whole ſeries of modern obſervations.

The peſtilential ſtate of air, in that period, is ſtrongly marked by the appearance of myriads of unuſual and loathſome inſects, not only in China, but in Europe. They are deſcribed as young ſerpents, or as venemous inſects, or as large vermin with tails and eight ſhort legs—in which deſcription, probably, a frightened imagination had ſome ſhare of influence. But of the fact of their exiſtence, there can be no doubt.

In the Ouſe there was a great inundation juſt before Aſcenſion day, and in York began this plague ſpeedily after the flood.

The ſymptoms of this fatal malady were—violent affection in the head and ſtomach, buboes and other glandular ſwellings; ſmall ſwellings like pimples or bliſters; uſually a fever, and a vomiting or ſpitting of blood.—The ſwellings in the glands were infallible ſigns of the diſeaſe; but the moſt fatal ſymptom was, the pimples or bliſters ſpread over the whole body. Hemorrhages from the mouth, noſe and other parts, indicated a univerſal and ſudden diſorganization of the blood. The patient uſually died in three days or leſs—which denotes the virulence of the poiſon, or rather the activity of the diſeaſe, which deſtroyed the powers of life in half the time, which the bilious plague uſually employs.

The peripneumony which was epidemic about the ſame time, appeared in a burning fever, inſatiable thirſt, a black tongue, anxiety and pains about the heart, ſhort breath, a cough, with expectoration of a mixed matter, open mouth, raging delirium, fury, red, turbid or black urine, reſtleſſneſs, and watchings, black eruptions, anthraces, buboes, and in ſome, corroding ulcers over the whole body. The diſeaſe uſually terminated the 4th day, ſometimes not till the 7th. The blood was black and thick; but ſometimes greeniſh and watery or yellowiſh.—Veneſection was certain death. The diſeaſe baffled medical ſkill—the only remedies that appeared to relieve, were laxatives early adminiſtered, cupping and ſcarification, leeches applied to the hemorrhoids, and inwardly, infuſions of mild, diaphoretic, attenuating, pectoral vegetables.

It will be hereafter proved that malignant pleuriſy and peripneumony uſually form a part of that ſeries of diſeaſes which always occur during a period of general contagion. When plague and yellow fever occur in *ſummer*, in northern climates, pleuriſy and peripneumony often aſſume, in *winter*, great and even peſtilential violence.

This plague was ſo deadly that at leaſt half or two thirds of the human race periſhed in about 8 years. It was moſt fatal in cities, but in no place died leſs than a third of the inhabitants. In many cities periſhed nine out of ten of the people, and many places were wholly depopulated. In London 50,000 dead bodies were buried in one grave yard. In Norwich died about the ſame number. In Venice died 100,000—in Lubec, 90,000—in Florence the ſame number. In the eaſt periſhed twenty millions in one year.—In Spain the diſeaſe raged three years and carried off two thirds of the people. Alfonſo 2d. died with it while beſieging Gibraltar.

In this fatal period, the apprehenſion of death deſtroyed the value of property. In England, and probably in other countries, cattle were neglected and they ran at large over the country. The corn periſhed in the fields for want of reapers; whole villages were depopulated; and after the malady ceaſed, multitudes of houſes and buildings of all kinds were ſeen mouldering to ruin. A horſe which before had been worth forty ſhillings, after the ſickneſs, ſold for half a mark.

Altho in the year preceding there had been a plenty of proviſions, yet the neglect of agriculture during the general diſtreſs produced a famin. Such was the loſs of laborers, that the few ſurvivors afterwards demanded exorbitant wages, and the Parliament of England was obliged to interfere, and limit their wages, and even compel men to labor.—See 23d Edward 3. A. D. 1350. The preamble ſtates, that a great part of the people, eſpecially workmen and ſervants had died of the late peſtilence, and thoſe who ſurvived, ſeeing the neceſſity of men, demanded exceſſive wages.

This diſeaſe was particularly fatal in Denmark—all buſineſs was at a ſtand, towns were deſerted, and all was terror and deſpair. It reached the higheſt northern latitudes; it broke out in Iceland, and was ſo fatal, that the ſettlements there are ſuppoſed not to have ſince recovered their population. It was called the *ſorte diod*, black death.

In ſome places people attempted to eſcape infection by taking their families on board of veſſels, and putting to ſea; but it was in vain; they were ſeized in every place, without regard to age or ſex.

In 1348 the malady ſwept away the Greenland merchants and ſeamen. This diſeaſe alſo, or ſome other cauſe deſtroyed the colony of Danes in that country, for it was extinguiſhed and has never been found or heard of to this day.

This peſtilence was remarkably fatal to the monks and regular clergy of all deſcriptions. In one ſociety at Montpeliers, of 140 members died all but 7: About the ſame proportion periſhed in Magdalen Society. In Marſeilles, of 140 not one ſurvived. But a circumſtance related in Knighton's Chronicon deſerves particular notice. At Avignon where the diſeaſe firſt appeared in France, 66 of the Carmelites had died, before the citizens were apprized of the fact; and when it was diſcovered, the report circulated that the brethren had killed each other.

An important conſequence reſults from the fact—that this plague firſt appeared in a monaſtery, which might be crouded with lazy, idle, filthy monks; in a city not commercial, nor a ſea port. There was no idea of any imported infection; but there muſt have been ſtrong *local* cauſes, which firſt excited into action the general contagion which, at that time, pervaded the atmoſphere over the whole globe.

Such was the havoc made by this peſtilence among the clergy in England, ſays Knighton, that a vicarage which before the plague, might have been ſupplied for four or five marks a year, or two marks and the man's board, was raiſed to the price of twenty marks or twenty pounds.

Col. 2600.

This peſtilential period was preceded and attended with all the uſual phenomena of fatal Epidemics.* The earthquakes and the inſects have been noticed. Abortions were among the remarkable precurſors of this malady. The ſame fact is noticed by Diemerbroeck, before the great plague at Nimeguen, in 1635. The ſame has been mentioned by the authors he quoted, Foreſtus, Sennertes, and others ; and is aſcribed to the tenderneſs and debility of the heart and Viſcera. Hence pregnant women firſt feel the effects of a ſtate of air unfriendly to the ſupport of life, and if they are ſeized with plague, are always its victims.

Another phenomenon attending this plague was the *death of fiſh*. This circumſtance, with the bad ſtate of the water, which is often affected by the peſtilential ſtate of the elements, and was greatly affected in this period, gave riſe to a report that the Jews had poiſoned the wells and ſprings. The prejudices againſt the Jews, which have marked and ſcandalized all chriſtian countries, except America, were at their height in the reign of Edward the 3d of England, the period under conſideration. Theſe prejudices drove legiſlators and princes to exerciſe every ſpecies of cruelty upon the Iſraelites, on account of their uſury ; and when the report of their poiſoning the water circulated, the populace in ſome places and eſpecially in Germany, roſe and aſſaſſinated multitudes of theſe unfortunate men.

The death of animals, particularly of ſheep, marked the ſame period. In England, 5000 died in one paſture. The ſtate of the air and water was ſo peſtilential that it is averred by hiſtorians, the fowls and fiſhes had blotches on them.

Authorities. Short, on air. vol. 1. 165. Knighton, Chron. Pennant's Arctic Zoology p. 67. Townſend's Travels in Spain, vol. 2. 219. Maitland's Hiſt. of London. Muratori, Tom 3. 588 and 594. Univ. Hiſt. vol 32. 251. Stow's Survey, 478. Mazeray's Hiſt. France. Villani, and many others.

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* Except eruptions of volcanoes, of which I have no account, at this period except in Iceland in 1340. But my accounts of volcanoes are very imperfect.

It may be remarked that this mortal peſtilence raged in England and France, during peace, or rather during a truce, which had been concluded between Edward III and the King of France in 1347, and which laſted ſeven years.

Guido, an inhabitant of Avignon, when this malady appeared, and who eſcaped death by the favorable proceſs of a bubo, relates a fact that throws light on this ſubject. He ſays that the malady was of two kinds—"the firſt, and *which preceded the other about two months*, was a fever, with ſpitting of blood," not unlike that which prevailed in the time of Fracaſtorius. All who were ſeized with theſe ſymptoms, died in three days.

The other kind, which ſucceeded the firſt, came on with continued fever, carbuncles and abſceſſes, in the glands.—This was as fatal as the other, except near its decline, and the patient died in five days.

Friend's Hiſt. Med. p. 564.

It is remarkable, that the diſeaſe which is technically called *plague*, peſtis, is always preceded by a ſimilar fever. It is in fact the *plague in its firſt ſtages*, tho it does not exhibit the glandular ſwellings, which modern phyſicians contend are characteriſtic of true plague, and mark a generic or at leaſt a ſpecific difference between that and any other kind of typhus fever. This fact of a *progreſſiveneſs* in the diſeaſe, annihilates the favorite notion of deducing all plagues from infection; a notion which is bandied about between phyſicians and legiſlators like a tennis ball, tho unhappily for mankind, infinitely leſs harmleſs.

At the cloſe of this dreadful period, in 1350, were ſevere earthquakes in Italy. In 1356 a violent ſhock in Switzerland, and in Germany, eſpecially on the Rhine, which did great injury. To this ſucceeded moſt violent rains, and famin and peſtilence in Germany, with prodigious mortality.

Muratori, Tom. 3. part. 2. 594.

Brabant eſcaped this terrible peſtilence and ſo did Milan.

In 1352 authors relate that 900,000 people in China periſhed by famin.

The rainy and humid ſeaſons which introduced the great peſtilence of 1347–50, were ſucceeded by drouth in 1350, a comet in 1351, with tremendous ſtorms, and a meteor which burſt with a heavy report. The winter following was ſevere, and in 1354 Africa and Cyprus were devoured by locuſts.

In England prevailed epidemic madneſs in 1355.

In 1358 was a ſevere winter, followed by an eruption in Iceland, and a waſting plague in Italy in 1359. According to Baccace, Florence loſt 100,000 citizens, and Petrarch ſays, ſcarcely ten of a thouſand ſurvived. There was a great mortality particularly among child-bed women, and cattle did not eſcape.

This peſtilence alſo became nearly general. In 1361 Milan, which had eſcaped in 1348, was ſeverely afflicted, as was all France, England and Ireland, and it was computed that Scotland loſt one third of its inhabitants. This plague was called the *ſecond* in the reign of Edward III, and it was in time of peace.

In this peſtilential time, occurred a remarkable ſtorm of hail and ſnow, in April 1360. The tendency of the elements in ſuch periods to generate hail and ſnow, is a fact that well deſerves conſideration.

In January 1361, a violent tempeſt ſpread deſolation over Europe. The winter was ſevere, and the ſummer dry. In March 1362 appeared a comet in the North Eaſt, with a vaſt coma, and an eruption in Iceland. A dearth and diſeaſes among cattle followed.

This laſt peſtilence differed from that in 1348, in two or three particulars. It raged with moſt violence, on mountainous diſtricts, where the air was pure, and where the plague of 1348 did not prevail. It attacked the nobility and gentry with more violence than the poor ; contrary to the uſual fact ; whereas the diſeaſe of 1348 was moſt fatal to perſons in the humbler walks of life.

Muratori Tom. 3. part 2. 600. Liber Niger Saccarii vol. 2. 433.
Henry's Hiſt. Britain vol. 4. 194.

The comet and volcano of 1362 were followed in 1363 by a winter of extraordinary ſeverity, which laſted from September to April. The Rhine was covered with ice for ten weeks.

The year 1365 was rainy, and the plague carried off 20,000 people in Cologne, and the vicinity. In 1366 an eruption in Iceland deſtroyed 70 farms. The ſame year was very ſickly in England and deaths ſudden.

In 1368 was viſible in March a comet with a coma, and the crops failed. In this year commenced in England the third great plague in the reign of Edward III.; the reader will note that this was preceded by a ſickly year in 1366. The mortality was great, and eſpecially about Oxford. The moſt fatal year was 1369, and in Ireland the diſeaſe raged in 1370. I have no particulars of the progreſs of the diſeaſe on the continent; but it was very fatal.

Murat. vol. 3. 632. Piſtorius vol. 1. lib. Niger 435.
Maitland's Hiſt. Lond. Van Trail's Letters on Iceland.

In 1373 raged an epidemic madneſs among the lower people in England; and in 1374 a ſimilar diſorder prevailed in France and Italy. During peſtilential periods, ſome general cauſe ſeems to affect the brain in a powerful manner, even in perſons who eſcape the plague.

In 1374 alſo was an eruption of a volcano in Iceland. There was alſo famin, a violent plague in Italy and ſome parts of France. In 1371 there had been a ſevere earthquake in the ſouth of France.

Murat. Tom. 3. 646, 649.

In 1379 commenced a great ſickneſs in the north of England, which almoſt laid waſte the country; and in 1380 was ſeen a comet. The diſeaſe is not deſcribed, but it was the forerunner of a moſt dreadful plague. Proviſions were good and cheap.

In 1381 and 2 conſiderable earthquakes were felt in England, and a ſevere peſtilence appeared at Avignon in France, which raged for four or five years, depopulating many cities. It prevailed in Italy, France, Germany, England, Ireland, Greece, and the Eaſt.

There was an eruption of Etna in 1381, and the year cloſed with great rains. The year 1382 was without winds. The plague was moſt fatal to children, and great ravages were made alſo among the friars. In this peſtilence Lubec loſt 90,000 people.

Liber Niger Sac. 441. Short on Air.

In 1388 the drouth was ſo ſevere, that the Rhine was fordable at Cologne. In 1389 violent tempeſts raged in England, with great deſtruction; and in the year following, was an eruption of a volcano in Iceland. In modern days, we obſerve the ſame train of phenomena, evidently depending on one general cauſe. In 1389 appeared a ſingular meteor or light in the heavens.

The year 1389 was remarkable for the death of children in all parts of England. From the phenomena that attended and the diſeaſes which followed, compared with the order of diſeaſes in modern days, it appears very probable that this diſeaſe was a ſpecies of Angina, which almoſt invariably precedes the plague. In the next year, a deadly plague raged in the north of England. Swarms of gnats and flies marked this period, and ſome parts of the continent were overrun with locuſts.

Piſtor. vol. 1. Short on Air.

The reader will remark the exceſſive drouth preceding the eruption in Iceland and the fiery appearance in the heavens in the year of the tempeſt. In theſe phenomena, nature is nearly uniform.

It is a very common event that dyſentery of a malignant type ſucceeds the plague. Such was the caſe in England, in 1391, when this diſeaſe was epidemic and very mortal. A dearth of corn might have contributed to the ſame event; but it is often the fact, without any ſcarcity of food.

An uncommon redneſs of the ſun is mentioned in July of 1391, and for ſix weeks after, thick vapor or clouds. Perhaps theſe might have been occaſioned by the eruption in Iceland, in the preceding year; as it appears to have been a phenomenon ſomewhat ſimilar to that which Europe beheld with amazement and terror in 1783.—I have however my ſuſpicions that while the central fires expel immenſe quantities of burning lava, from volcanoes, they may force through the earth in the adjoining continents, a ſubtle vapor, that is inviſible, until it is collected and condenſed in the higher regions of the atmoſphere.

The beginning of the 15th century was marked by a ſevere and deſolating peſtilence. The diſeaſe firſt appeared in the laſt year or two of the former century. In 1399 the mortality was ſuch in Spain, eſpecially in Andaluſia, that the king was obliged to ſuſpend the law which reſtrained widows from marrying within a year after the death of their huſbands. It was preceded by a ſevere winter.

Mod. Univ. Hiſt. vol. 20. 353.

In 1402-3 and 4 the plague in Iceland carried off multitudes of the inhabitants.

Van Troil.

In 1400 epidemic and mortal ſickneſs prevailed in England. A violent earthquake the ſame year in Perſia. In 1401 Florence was nearly diſpeopled by the plague. In 1402 in March appeared a comet of a fiery aſpect, and coma, which was viſible for three months.* In 1402 a froſt ſo ſevere that the Baltic was paſſable for horſes for ſix weeks. In 1406 the ſea broke into Holland, Zealand and Flanders, with prodigious injury. A plague carried off 30,000 people in London; and a comet the ſame year. The winters following were ſo ſevere that moſt birds died. In Sept. there were great floods from rain. In 1408 there was an eruption of Etna and deep ſnow.

Piſtorius, Germ. Script. vol. 1. Short on Air.
Maitland's Hiſt. Lond.

The ſummer of 1406, when the plague raged in London, was cloſe, moiſt and ſoutherly weather.

In 1411 the dyſentery carried off 14000 people in Bourdeaux, but I have no account of the ſeaſons. The plague raged in Aquitain and Gaſcoigne with great mortality. In 1412, there were uncommon tides in the Thames. In 1414 a comet, and in 1416 an eruption of fire from a volcano in Iceland, preceded by great ſnow.

In 1421, according to ſome authors, happened the dreadful inundation in Holland, which formed the Zuyder Sea. In 1422 there was an eruption of fire in Iceland, and a ſevere winter followed. The ſame year, the plague raged in Poland. From theſe phenomena, I ſuſpect the approach of a comet, but have no account of one.

In 1426 a comet, an exceſſively hot ſummer, and a violent earthquake which overturned twenty cities in Catalonia, in Spain, and was felt in moſt parts of Europe. In 1427 the ſeaſons were rainy, the winter mild, a dearth and famin followed, and the plague in Dantzick. Epidemics prevailed in England, and the year following, the plague.

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* According to Liber Niger Saccarii, this was in 1401, and this is moſt probably correct. The period of this comet is 343 years and we ſhall find it under the year 1744.

In 1430 happened a general earthquake—in 1432 a great inundation in Germany—in 1433 a comet was viſible for three months, in the ſouth, and the winter following was terribly ſevere. The froſt began in the laſt week in November and laſted till the middle of February.

Piſtorius Germ. Script vol. 1. Short, vol. 1.
Liber Niger Sac. vol. 2.

In 1436 there was an eruption of a volcano in Iceland and a ſevere winter. An epidemic fever prevailed in Venice, which was attributed to the uſe of ſtagnant water.

In 1438 and 9 violent ſtorms and great rains injured the corn and a dearth enſued. A comet in 1439 and a hard winter followed. To theſe phenomena ſucceeded in 1440 a ſeries of diſtreſſing epidemics, ſevere coughs, ſmall-pox, fevers and dyſentery, which proved exceedingly fatal.

Short vol. 1. Piſtorius vol. 1.

In 1443 Bohemia, Hungary, and Poland were terribly injured by an earthquake. In 1444 there was eruption of Etna and Lipari, and the exploſion was repeated in 1446 and 7. An epidemic prevailed in 1445, which ſuddenly ended life, but it is not deſcribed. In January 1449 was ſeen a comet. This year the plague raged in Italy and in 1450 famin and plague. In Milan periſhed 60,000 people.

Muratori vol. 13. Short vol. 1.

This plague of 1450 is ſaid to have ariſen in Aſia, and afterwards ſpread over Italy, Germany, France and Spain, leaving alive ſcarcely a third of the human race.

In 1455 appeared a comet and another in 1456. In this latter year, Italy was violently ſhaken by an earthquake, and 40,000 people periſhed.—Piſtorius places the earthquake in 1457, and ſays it demoliſhed 40 towns, and deſtroyed 60,000 lives. In 1459 a plague began in July and raged ſix months in Italy.

Piſtorius vol. 1. 375. Muratori Tom. 5. p. 50. Short vol. 1.

It will be obſerved, in this period and in many others, that the plague is not mentioned under the year of the earthquake. Modern obſervations explain the progreſs of peſtilence, which is moſt uſual, viz. meaſles, catarrh, angina, and other malignant complaints *preceding* the criſis of the peſtilential ſtate of air, or plague. And we find almoſt invariably ſome of theſe diſeaſes to be epidemic, even *before* the comet, earthquakes and eruptions of volcanoes, altho the moſt violent form of the peſtilence does not always appear till a year or two *after* thoſe phenomena. There is alſo a difference, in the times of the appearance of the plague in various countries. In Egypt, the peſtilence uſually appears firſt, and is cotemporary with the comet, or nearly ſo; and the ſame year, when the plague rages in Egypt, we find anginas and other malignant diſeaſes prevailing in Europe and America, in northern latitudes. This difference in time evinces the power of local cauſes, in aiding the progreſs of the epidemic conſtitution of air, and which produce the moſt violent diſeaſes in Egypt, one, two or three years, previous to their appearance in cooler latitudes. But it will almoſt always be found true, that the commencement of a ſeries of epidemics is nearly at the ſame time in all parts of the world; the precurſors of the plague being nearly cotemporary in different countries; altho the peſtilential conſtitution or general contagion arrives to its criſis much ſooner in Egypt, Smyrna and Conſtantinople, than in places leſs expoſed to the influence of local cauſes of diſeaſe.

In 1465 peſtilence again appeared in Italy, but I have no particulars. In 1467 a comet, and a *mild winter* is recorded; a remarkable fact, and the ſecond inſtance I have found in hiſtory. Indeed ſo uniform are hard winters during the approach of comets, that the accounts of exceptions are to be ſuſpected of inaccuracy in point of time.

In 1468 a moſt deadly plague raged in Parma of which Short gives a particular deſcription from Rolandus Capellatus.

Short, vol. 1. 194. Muratori, vol. 13. Edit. Milan.
Piſtorius, Germ. Script. vol. 2.

In 1471 the winter was rigorous and ſtormy. In 1472 appeared three comets; two of them of diſtinguiſhed magnitude. In 1473 moſt exceſſive heat and drouth, and authors relate that the woods took ſire by the heat of the ſun. This drouth continued three years—all ſmall rivers were dried up—the Danube was fordable in Hungary. In 1475 and 1476 appeared thoſe enormous ſwarms of locuſts, which always denote a ſtate of air highly peſtilential, and ravaged Hungary and Poland. In 1474 earthquakes were felt in Germany. In 1475 an eruption of a volcano in Iceland.

Theſe phenomena, in this period, as uſual, introduced moſt terrible peſtilence, which began in 1472 and arrived to its height in 1477. It raged in Italy, Germany, France and England, and how much more extenſively, my authorities do not inform me. It prevailed ſeveral years, with incredible mortality. In Paris periſhed 40,000; a large number for the population at that time. In England the number of deaths was not eſtimated; but authors relate that fifteen years of civil war did not carry off one third of the number. This year 1477 was exceſſively hot. In 1478 innumerable locuſts overran Italy.

In 1478 and 9 the plague in England repeated its ravages; beginning like that of 1348, in autumn, raging through the winter until the next autumn.

Piſtorius, vol. 2. 754. Muratori, vol. 13.
Short, vol. 1. Maitland's Hiſt. London.
Fracaſtorius de Contagione, 136.
Fernelius de morbis Peſtilentibus.

In 1480 the winter was ſevere.

In 1481 and 3, a moſt deadly plague infeſted Italy and Germany.

Muratori, vol. 13. Piſtorius, vol. 2. 875.

In 1482 a ſpecies of pleuriſy was epidemic in Italy.

Fracaſtor. p. 182.

In 1484 the winter was ſevere.

In 1483 or 5 appeared in England a new ſpecies of the plague called Sudor Anglicus, or ſweating ſickneſs of the Engliſh, becauſe it was ſuppoſed to attack none but Engliſhmen. This however was a miſtake; for the ſame diſeaſe, at different times, appeared in Ireland, Germany, Sweden and Holland.

In the life of Eraſmus, it is ſaid to have appeared firſt in 1483, and to have returned in 1485. John Kaye, or Caius, a cotemporary phyſician, ſays, it firſt appeared in 1485 in the

Duke of Richmond's army, on his landing at Milford Haven, in Wales. But on all hands it is agreed to have had its origin in England, and to have been a ſpecies of plague. It is called "novum peſtilentiæ genus," a new kind of peſtilence; and inſtead of being peculiar to England or Engliſhmen, "a Britannis exortum, incredibili celeritate per orbem longe lateque divagatum eſt;" it originated in Britain, and with incredible rapidity ſpread far and wide over the earth.

Life of Eraſmus, 347. Friend's Hiſt. Med. 566.

Sir Thomas More, in a letter to Eraſmus, declares this diſeaſe in London, Oxford and Cambridge to have been more dangerous than a battle. "Minus periculi in acie, quam in urbe eſſe."

The ſummer of 1485 was exceſſively rainy, and an inundation of the Severn made great havoc with men and cattle.

This diſeaſe attacked perſons ſuddenly, with a ſenſation like that of hot vapor running through the part affected. To this ſucceeded internal heat, unquenchable thirſt, and profuſe ſweating, which often carried off the patient in two or three hours. The violence of the attack was paſt in 15 hours, and in 24 hours the patient was conſidered to be out of danger. It was moſt fatal to perſons in high health and eaſy condition of life. It was attended with moſt of the ſymptoms which characterize the plague—anxiety, reſtleſſneſs, violent pain in the head, delirium and exceſſive drowſineſs.

See the life of John Caius, in Aikins' Biographical Memoirs of Medicine, p. 120, alſo Friend's Hiſt. Phyſ.

This was a peſtilential period, for the plague infeſted Italy and Germany in 1483, and Denmark in 1484. And it will be found on examination, that when the ſweating ſickneſs raged in any part of Europe, that or ſome other peſtilential diſeaſe, was in other countries. During the prevalence of this form of the plague in England, at this period, Denmark loſt nearly one half of its inhabitants by the common plague; which raged terribly for two years.

The author of the Traitè de la Peſte, page 23, remarks, "That until the 15th century the plague exhibited the ſame character; but then "its accidents degenerated," or rather it reigned a new malady, which, under different external appearances, committed ſimilar deſtruction on the human body. It did not any longer ſhow itſelf by buboes, carbuncles and pimples; nor by any of the eruptions which the heat of the viſcera puſhes out; nor was the ſkin withered by the parching dryneſs which accompanies the carbuncular ſpots; on the other hand, the ſkin was inundated by torrents of ſweat, which ſeemed to be poured from the whole body, the viſcera were dried, and the heat which diſſipated the fluids, ſeemed to diſorder all the laws of the animal economy.

About the middle of the 16th century, the plague reſumed its former character, but the ſymptoms ſomewhat varied and lighter."

The ſweating plague at firſt attacked none but Engliſhmen. Even Scotchmen eſcaped, in foreign countries, where Engliſhmen were ſeized. Foreigners in England eſcaped. This however was on its firſt invaſion in 1485—for, in ſubſequent years, it ſpread over other countries. But the fact of its ſeizing only Engliſhmen at firſt, is preciſely analagous to what has happened on many other occaſions, in other countries. It recurred in England in 1506, 1518, 1528 and 1551.

In 1491 appeared a comet, the ſeaſon was very wet, an epidemic ſwept away cattle, and a famin afflicted Ireland. A ſevere winter is noted in 1493.

Short, vol. 1. Smith's Cork. page 30.

In 1495 and 6 the plague raged in Portugal.

Hiſt. of Portugal by Oſorio.

In 1496 an epidemic leproſy prevailed in Germany, which covered the body with ulcers from head to foot.

Piſtorius, vol. 2.

In 1498 the ſummer was very dry. In 1500 a tempeſt in Rome did great injury, a comet was viſible in Capricorn, an eruption of Veſuvius, and a mortal plague raged which carried off in London 30,000 people. The king for ſafety retired to Calais. Maitland arranges this plague under the year 1499. This peſtilence was preceded by an abundance of proviſions.

Short, vol. 1. Maitland's Hiſt. London.

It is a current opinion that the venereal diſeaſe was *imported* into Europe by the firſt adventurers to America, with Columbus; and that it gradually ſpread in Spain; from whence it was carried into Italy by ſome of the ſoldiers, who were in the ſiege of Naples in 1494; thence it was propagated rapidly throughout Europe. This ſubject will be hereafter conſidered. It is however remarkable, that an epidemic leproſy ſpread over Germany, about the ſame time, which ſeems to indicate an unuſual tendency in the human body to ulcerous and ſcorbutic complaints.

SECTION V.

Hiſtorical view of peſtilential epidemics, from the year 1500 *to the year* 1600.

THE comet of 1500 was followed by an exceſſively ſevere winter in 1501, to which ſucceeded a ſummer of great heat and drouth in 1502. In this latter year the plague carried off 500 perſons daily in Bruſſels; the city was ſoon abandoned, the ſtreets were overgrown with graſs, and the roofs of houſes with moſs.

Skenkius' Obſ. p. 748.

De Pauw vol. 1. 85, mentions a deſolating plague in China in 1504. In the ſame year, the malady prevailed in Ireland.

In 1505 appeared a comet; and another in the following year, in which alſo was an eruption of Veſuvius, which was ſucceeded by a ſevere winter. Peſtilential diſeaſes were univerſal. A fatal ſpotted fever overſpread Europe in this hot, moiſt ſummer. The plague raged in Liſbon and London was ſeverely viſited by the ſweating diſeaſe.

Short vol. 1. Smith's Cork p. 34. Oſorio's Hiſt. of Portugal. Fracaſtor, de Contagione.

In 1508 a great earthquake convulſed Italy and Germany. In 1509 a ſhock demoliſhed a part of the walls of Conſtantinople, with many buildings, and the loſs of 13,000 lives: After which the plague almoſt diſpeopled the city.

Theſe events commenced a diſtreſſing period. In 1510 there was an eruption of Heckla, and univerſal catarrh or ſevere influenza in Europe. This was called in France *cocoluche*, from the practice of covering the head of the patient with a cap. It was preceded by a ſeries of moiſt weather.

In 1511 appeared a comet; another in 1512 and a third in 1513. In 1511 the plague prevailed in Verona, and in 1513 a malignant fever or dyſentery, which covered the body with black ſpots. Bleeding was pernicious; cupping and actual cautery were ſucceſsful.

In 1514 cats periſhed by an epidemic peſtilential diſeaſe, ſays Fernelius; and the plague was in Tournay; while a mortal diſtemper raged among the cattle in England.

In 1515 a malignant catarrh or throat diſtemper in Holland ſeized perſons ſuddenly, and if not cured, in a few hours, fell on the lungs and terminated in death in one day. In this year and the next appeared comets, and Germany ſuffered univerſally by inundations.

To theſe diſaſters ſucceeded a ſevere winter in 1517, followed by a very hot ſummer. Corn was in great abundance, but the ſweating plague made great havoc in London, and ſo malignant a murrain raged among cattle, that ravens and dogs which fed on their carcaſes, ſwelled and died.

This deadly ſweating plague was preceded, in the ſpring of the year, by an epidemic inflammation of the throat, ſo virulent as to deſtroy life in a few hours. The malignity of this diſeaſe has rarely, if ever been equalled in modern times. It ſeems to have been merged in the ſweating plague, about midſummer. Authors relate that half the people of England periſhed with theſe diſeaſes.—The diſeaſe in the throat ſeems to have been of an inflammatory diatheſis, as early bleeding and purging were the only ſucceſsful remedies.

In 1518 the plague viſited Liſbon, and the ſweating diſeaſe prevailed in Brabant.

Short vol. 1. 206--7. Smith's Cork, 34.

In 1521 appeared a comet, followed by a cold winter. Inundations are ſaid to have overwhelmed, in this year, 72 villages and 100,000 people. England ſuffered by dearth and ſickneſs, and in 1522 the plague viſited Munſter in Ireland, and the continent.—The winter following was diſtreſſingly ſevere.

Peſtilential fevers prevailed in 1524 and 5. The mortality in London alarmed the people, and the terms were on that account, adjourned. In 1527 appeared a comet, and one in each year, for ſix years in ſucceſſion. In 1527, the wetneſs of ſummer injured the grain, a ſevere famin enſued, and many of the poor were ſtarved to death. This year is noted for a great hail ſtorm in Italy.

In 1528 the ſpotted fever, that almoſt infallible precurſor or companion of the plague, broke out in all parts of Europe; the plague in Italy, and the ſweating diſeaſe in London with dreadful mortality, terminating in death in ſix or ſeven hours. The ſame diſeaſe prevailed in Cork.

In 1529 the ſweating diſeaſe ſeized Amſterdam, raging a few days with great mortality, and paſſing rapidly to other places.

In 1530 was an eruption of Etna, and an earthquake in Liſbon demoliſhed 1400 houſes. In 1531 was another eruption of Etna, the ſweating plague raged in Germany, and peſtilence, in ſome form, was almoſt univerſal.—A great hail ſtorm, the ſame year.

See Skenkius' Obſ. Smith's Cork 35. Short vol. 1.
Maitland's Hiſt. London.

Fracaſtor informs us that the petechial fever of 1528 was preceded by a mild winter and ſoutherly rainy weather, together with inundations in ſpring, and unuſual darkneſs. He obſerves, that appearing in many places, it muſt have had a common cauſe.

De Contagione, p. 160.

The laſt remark is verified by modern obſervations. The petechial fever is an almoſt infallible forerunner of the plague in the Levant, in Italy and other countries. It may be laid down as an axiom, on this ſubject, that altho the appearance of this fever is not *always* and *certainly* followed by the plague, yet that the plague, in moſt parts of the eaſt, is *always* preceded by a petechial fever.

In 1533 there was a volcanic eruption in South America, but I have no account of the diſeaſes of that year.

In 1534 the plague was in Narbonne.

In 1535 there was a terrible plague in Cork.

In 1538 appeared a comet, which was preceded by eruptions of Etna in 1536 and 7 and a hard winter. In 1539 another comet and in 1541 a third.

In 1538 a mortal dyſentery raged all over Europe, as alſo in the following year. The preceding ſummers had been moiſt, and an acute fever, with violent pain about the heart, delirium, moiſt and black tongue, anthraces and buboes, had been epidemic. But Fernilius remarks that the unuſual dyſentery of 1538 and 9 could not be aſcribed to any viſible cauſe in the ſeaſons.

In 1538 alſo was a violent earthquake at Puteoli, near Naples and Veſuvius, where there was an immenſe eruption of fire. This year the plague raged in Conſtantinople, and in 1539 was ſtill more deſtructive.

In 1539 the drouth in Ireland was exceſſive—and nearly dried up the river Lee at Cork.

In 1540 there was a terrible drouth. In England a peſtilential ague and a dyſentery were epidemic and mortal. Another eruption of Etna happened this year, and the next year a comet.

Short, vol. 1. Mignot's Hiſt. Turkiſh Empire, vol. 2. p. 4.

In 1541 the plague raged in Conſtantinople.

The year 1543 was very wet and cold, and a great mortality among cattle. In 1542 the plague was in Geneva. In 1543 it raged in London in winter. In 1545 there was an eruption of Etna. The plague again raged in Geneva, and all over Europe a peſtilential epidemic, called the Troup Gallant, which ſeized chiefly the young and robuſt, with a mortality nearly equal to that of the true plague, of which it ſeems to have been the precurſor. Patients had a violent pain in the head, heat in the kidneys, univerſal laſſitude, continual watchings ending in frenzy, or drowzineſs ending in lethargy; and worms riſing into the throat, with danger of ſuffocation. Bleeding was the only remedy; then detergents and cordials. The diſeaſe terminated on the 4th or 11th day. Charles, duke of Orleans, died of this diſeaſe at a monaſtery in Abbeville.

In 1547 the plague prevailed in moſt parts of Europe, as in Ireland and in Germany; and in 1548 in London. Here my labors begin to receive aid from that accurate and elegant hiſtorian Thuanus, who, in lib. 4, deſcribes the diſeaſe as it prevailed in Saxony. "Such was its violence that all other diſtempers gave way to it or ran into it. Moſt of the ſoldiers in the

Emperor's army were ſeized. They experienced a moſt intolerable pain from the heat of the head; the eyes were ſwelled and fiery; the tongue bloody; reſpiration difficult and breath fetid; vomitings of bilious matters frequent; finally the body became livid, with pimples here and there ſcattered over it, which bred worms. Death took place the ſecond or third day."

During this year great rains inundated Tuſcany. Locuſts in 1547 were unuſually numerous.

Short, vol. 1. Thuanus, lib. 1. and 4.
Univ. Hiſt. vol. 37. Smith's Cork. p. 40.

This peſtilential period was long and ſevere. In 1548 the plague was in London. A contagious peripneumony prevailed over Europe, with ſpitting of blood and difficulty of breathing. In 1549 the plague prevailed in Pruſſia and Portugal.

In 1550 a comet in March, and the ſame year an eruption of Etna and Lipari. The ſummer was very rainy and the winter dry. In 1551 the earth was deluged with rain, and infinite damage was done by floods. The catarrh was epidemic in France. An epidemic peſtilential fever raged all over Europe, and the ſweating ſickneſs in London. The plague followed in various parts of Europe. In 1552 it raged in Miſena, and the patient diſcharged blood by the pores for three days before death. In 1553 the ſame diſtemper raged in Paris, with extreme mortality, and to appeaſe the wrath of heaven, many heretics were burnt.

At the ſame time, peſtilence ſpread over Hungary and Tranſylvania for two years and ſuſpended the operations of war. This year alſo there was an earthquake from the Elbe to Saxony.

Thuanus, lib. 12. Skenkius' Obſ. p 766.

In 1554 there was an eruption of fire in Iceland and in the ſame year appeared a comet. In 1555 the ſummer was exceſſively rainy, and fevers were very mortal in England and France.

In 1556 a comet and a drouth; the fevers of the laſt ſeaſon raged with augmented violence; as alſo the ſpotted fever and confluent malignant ſmall pox.

This year there was an eruption of Etna, and in China a large diſtrict of country was ſunk by an earthquake, with all its inhabitants, and became a Lake. Theſe phenomena indicated a great diſorder in the elements and introduced moſt deadly epidemics.

In 1557 a comet; an inundation of the Tyber; and a violent catarrh was almoſt univerſal. The cough was ſevere, and pain in the ſide, difficulty of breathing and fever attended. In general bleeding the firſt or ſecond day was ſucceſsful; but in a ſmall town near Madrid, bleeding was fatal, and 2000 patients died after veneſection.

In Alemar this epidemic aſſumed the form of a ſore throat; 2000 perſons were ſeized almoſt inſtantly in October, of whom 200 died. Foreſtus aſcribes it to a vapor, for it was preceded by thick clouds of an ill ſmell.

In 1556 the plague raged in Vienna.

In 1557 a violent plague broke out in a ſmall inland village between Delph and the Hague in Holland—an inſtance of its origination at a diſtanee from a ſea-port; and it ſpread over the country, in June. This diſeaſe was preceded by meteors in the air, and attended with abortions. Such was the mortality, that the poor fought for coffins for their dead relations. In Delph only, died 5000 of the poor. It continued through the winter to May 1558.

In the ſame ſummer peſtilential fevers raged with great mortality in France, Holland and other countries.

In de Thou's hiſtory of his own times, vol. 2. 227, we have an account of the ſpotted, or petechial fever, which appeared in Spain in 1557, which was nearly as mortal as the inguinal plague. He calls it a "new diſeaſe" and unknown to the ancients. The ſpots differed from the florid pimples of the purple fever. It was putrid, malignant and much reſembling the plague, but "did not carry ſo peſtilent a contagiouſneſs." It was called in Spain the "puncticular diſeaſe." Innumerable people periſhed by it that year. The ſame fever in Florence "was ſucceeded by a violent plague," which had raged on the Tuſcan coaſt.

In 1558 appeared a comet. The ſummer was exceſſively hot and the winter very cold. Dyſenteries raged in France, and in Holland ſemitertians, which affected principally the rich, as the plague, the laſt year, did the poor. In ſome places quartan agues were fatal, and malignant fevers, in others.

Violent tempeſts and inundations are mentioned, this year and the laſt. In 1558 died Charles V. emperor of Germany.

Short vol. 1. Van Swieten vol. 16. p. 23.
Maitland's Hiſt. Lond. Univ. Hiſt. vol. 27. 373.

In 1560 a comet, and a dearth of corn in England.

In 1562 and 3 the plague ſpread over Europe. It broke out in 1562 among the Engliſh ſoldiers, who were ſent to garriſon New-Haven in France. The next year it raged in London and carried off 20,000 of its inhabitants. Authors ſay, the ſoldiers from New-Haven introduced it into London; but who introduced it into New-Haven, we are not informed.

The truth is, this terrible diſeaſe appeared in moſt parts of Europe about the ſame time. In Frankfort, Nuremberg, Magdeburgh, Hamburgh, Dantzick, and in the vandalic maritime towns, Wiſmar, Lubick, Roſtock and others, periſhed by computation 300,000 perſons in the year 1563.—This diſeaſe alſo raged in winter, for Thuanus mentions the death of Caſtalion, a literary character of that age, by the plague at Baſle in January.

This year was remarkable alſo for earthquakes. In Sept. was a violent one in England, eſpecially in Lincoln and other northern parts. In January the river Thames was agitated by preternatural fluxes of the tides, which forced back the natural tides, three times. In winter, ſevere cold rendered that river paſſable as a highway.

The ſame year earthquakes were felt in Illyrica, and Dalmatia, and Catana ſuffered a great loſs of lives.

In 1564 a comet appeared, and remarkable northern lights, or meteors, and a deſtructive inundation of the Thames.

Short vol. 1. Maitland's Hiſt. Lond. Thuanus.
Strype's Life of Archbiſhop Parker, 131.

In 1564 epidemic quinſies were very mortal, and in ſome places, the ſpotted fever or the plague.—In winter came on as ſevere a froſt for two months as was ever known.

This epidemic quinſy was a ſpecies of angina maligna, and fatal as the plague. It ſpread over Europe.

In 1565 France was afflicted by peſtilential epidemics, in which bleeding and purging were fatal. The next year appeared the plague in Lyons.—Charles IX. demanded of the phyſicians the beſt mode of treatment, and they all decided againſt veneſection.—One fourth of the inhabitants of France periſhed.

In 1566 the ſpring was rainy and the harveſt dry. The Hungarian fever broke out in the Emperor Maximilian's army, and as authors affirm, the ſoldiers, when diſbanded, ſpread it all over Europe, with great mortality. This diſeaſe invaded the patient at 3 o'clock in the afternoon, with ſlight cold and ſhivering for about fifteen minutes. This was followed by intenſe heat, and intolerable pain in the head, mouth and ſtomach, ſo that the ſlighteſt touch of the bed clothes, made the ſick utter ſhrieks: The pain in the mouth and ſtomach being the pathognomonic ſymptoms of the diſeaſe.—The thirſt was unquenchable, and a longing for wine, which was fatal, if taken. The tongue was dry and lips chopt. Delirium came on the third day. A critical looſeneſs and deafneſs were favorable—Swellings behind the ears were frequent. The moſt miſerable criſis was, tubercles on the top of the foot, which, if neglected, ended in mortification. Many ſuffered amputation. Spots, like flea bites, appeared on the body, and if livid or black, they were fatal ſymptoms. Copious bleeding, on the firſt ſeizure, was, of all remedies, the moſt ſucceſsful.

Skenkius' p. 770. Short vol. 1.

In the year 1567 was an eruption of Etna, and in Tercera, one of the Azores, fire burſt from a lake on the top of a hill, and the water releaſed from its bed, ruſhed down and ſwept away part of a ſettlement below. In 1568 a ſpotted fever raged in Paris, in which proſtration of ſtrength rendered bleeding fatal. The winter of 1567 was very ſevere, and the ſummer exceſſively dry.

In 1569 appeared a comet.—The ſpotted fever in this year became epidemic in Europe, raging for three years with great deſtruction. The plague was in London. Short remarks that this ſpotted fever "in ſeveral places turned to the plague, and where the plague raged, it turned to this fever."—Indeed this ſpotted fever was a milder form of the peſtilence, raging as it uſually does, for ſome time, *before* the glandular plague appears. In this period, it was the herald to announce one of the moſt general plagues that Europe ever knew. The petechial fever prevailed principally from 1569 to 1574, interſperſed with the real plague, in a few places; and the real peſtis followed it, with mortal rage, and prevailed for three or four years.

In 1570 a moſt dreadful earthquake in Chili, S. America, deſtroyed many villages and buried the inhabitants in their ruins. This is the firſt occaſion I have of introducing America in this hiſtory.

Ulloa b. 8. ch. 7.

Thuanus, whoſe authority is very reſpectable, and who was cotemporary with this period, relates that in 1570 the dikes in Holland were broken by a ſwell of the ocean, and that 400,000 people were overwhelmed in the floods. He ſays further that ſimilar phenomena were obſerved, that year, in different places over the whole world. Reggio, Florence, Venice and Modena felt ſevere ſhocks of earthquake in 1571, and Ferara was laid in ruins.

The ſummers of 1570 and 71 were moiſt and warm; and in general the ſeaſons were ſimilar for the two ſucceeding years. The winters were rigorous. Fluxes, meaſles, worms and ſemi-tertians were epidemic in many places. In 1572 appeared a comet or new ſtar, very bright and clear, larger than Jupiter, in the conſtellation of Caſſiopeia, behind her chair. It was ſtationary for 16 months and by degrees evaniſhed. The winter ſucceding was remarkable for hard froſt and deep ſnow. The author of Obſervations de Phyſique et de Medicine, ſays, that all maladies in France in 1572 turned to epilepſy and palſy.

This year the plague raged in Poland; and at Baſle a malignant fever, chiefly fatal to men of robuſt conſtitution.

In 1574 the petechial fever, which had ſpread mortality over Europe, eſpecially in Italy and Spain, began to change into the uſual form of the plague. This diſeaſe made its appearance in London, in a ſmall degree, in October and November of this year.

In 1575 the plague appeared in many parts of Europe, and raged with incredible mortality for three years. It was reported in Italy to have been *imported* into Verona and Venice, from Trent. Such was the current vulgar opinion. But men of ſcience held the diſeaſe to be generated in cities from the *filthineſs of private dwellings*, and not to be produced by the poſition of the ſtars or malignant conſtitution of the air.

The truth was, the diſeaſe in Italy firſt appeared in Trent, an *inland town, far from the ſea*—another inſtance in which the advocates of importation from Africa or the Levant are ſilenced. Philoſophy diſdains to look abroad for the cauſe of an epidemic, when the ſtrongeſt of all cauſes exiſt in the place. Trent is ſituated in a valley, on the bank of the Adige, a river which often overflows the adjacent low lands; and after the flood recedes, the place is ſometimes ſo ſickly that the people are compelled to retire to the neighboring hills. Strong local cauſes therefore account for the *firſt* appearance of the plague in that city. The general contagion of the atmoſphere, which had produced ſpotted fevers and other deadly diſeaſes all over Europe for four years preceding, was aided by the local unhealthineſs of Trent, and here appeared firſt, the criſis of the peſtilence, or plague. See the deſcription of that country in Zimmerman on Air.

The diſeaſe almoſt depopulated Trent in 1575, and became mortal in the neighboring Venetian territories. This mortality however was only the forerunner of greater evils. The diſeaſe indeed ſubſided in winter, and the people ſuppoſed its violence to be paſt. They might have known otherwiſe, had they attended to the *progreſſiveneſs* of the malady, and the certain indications of its increaſe.

In 1576 the diſeaſe appeared in Venice; and as it carried off a few people at firſt, in ſcattered ſituations, opinions were, as uſual in all ſuch caſes, divided as to the nature of the diſtemper. In this ſtate of the public mind, two eminent phyſicians, Mercuriale of Forli, and Capavacca of Padua, undertook to aſſert the diſeaſe not to be peſtilential. The ſenate, obſerving the controverſy among the Venetian phyſicians, as to the nature of the diſtemper, liſtened to the two foreigners, who declared they could cure it, and put a ſtop to the removal of the diſeaſed from the city. By this means, ſays the hiſtorian, the diſtemper was obviouſly increaſed; and it raged with terrible fury, till it carried off 70,000 of the citizens, with fifty-ſeven valuable phyſicians and ſurgeons. The two foreign phyſicians were diſmiſſed, with applauſes for having preferred the good of Venice to their perſonal ſafety.

This account from Thuanus deſerves particular notice. We here ſee the ſame doubts about the nature of the diſeaſe on its firſt appearance, which prevail in all ſimilar caſes—as in Marſeilles in 1720—in London in 1665—and in America, with reſpect to the yellow fever, which is only another form of plague. The ſource of all theſe doubts and controverſies, which have ſo often embarraſſed the citizens and diſgraced the faculty, is, the *progreſſiveneſs* of the peſtilence. The malignant diſeaſes preceding, ſlide into the glandular plague ſo gradually, that phyſicians themſelves do not know preciſely when the diſtemper ſhould loſe the name of *malignant fever* and take that of *plague*. Sydenham honeſtly confeſſes that, in 1665, he did not know whether the malignant diſeaſe which appeared in May and became epidemic, juſt before the plague, was the real plague or not. And the truth is, that the diſeaſe often aſſails people, in a few ſcattering caſes, at the beginning of a plague, with a mortality equal to the true peſtis, and *without* the diſtinctive marks of plague, the glandular tumors.

Theſe facts will hereafter, with careful obſervation, obviate all controverſies at the beginning of peſtilential diſeaſes; and they will decide infallibly all queſtions relative to the domeſtic or foreign origin of ſuch maladies.

This peſtilence was ſeverely felt in Padua, Milan, Cremona and Pavia. Vicenza, which eſcaped this year, was viſited the next, with equal ſeverity.

Dr. Mead is puzzled to know why Vicenza, which lies between Verona and Padua, ſhould eſcape the plague, in the year when both thoſe cities were infeſted; and yet the next year, ſhould ſuffer equally with her neighbors, when *they* were exempt from the calamity. He finds ſome difficulty in accounting for the conveyance of the *infection* from one to another, without communicating it to the intervening city. This ſubject will be conſidered in a ſubſequent ſection; I will only here remark, that nothing is ſo fatal to truth and ſcience, as for a man of popular talents to eſpouſe an erroneous theory, and then ſtrive to bend facts to its ſupport.

See Thuanus, lib. 62. Shenkius, 756. Short, vol. 1.

In 1575 multitudes of flies and beetles were found in England, and in 1576 an earthquake was experienced.

In November 1577 appeared a comet of ſurpriſing magnitude, with a long coma—and moſt terrible tempeſts accompanied its approach. In 1578 another comet, and in 1579 an eruption of Etna. In 1578 were earthquakes in England.

Short, vol. 1.

In the great peſtilence of the preceding ten years, not only Europe, but Aſia was laid waſte. So general and ſevere was the diſeaſe that the operations of war, in the Turkiſh empire, were ſuſpended. Meſſina in Sicily loſt 40,000 inhabitants—and Europe muſt have loſt in ten years, by the peſtilence under the various forms it aſſumed, one third, or more probably one half her people.

In this period we ſee all the extraordinary operations of nature united. Comets, earthquakes, in Europe and S. America tempeſts, volcanoes, unuſual animals, exceſſive floods from rain or an extraordinary intumeſcence of the ocean all mark an extreme agitation or diſorder of the elements.—The vaſt comet of 1577, the year when the plague was at its height, was calculated to approach within 840,000 miles of the earth. Upon the Newtonian principles of the power of attraction, the influence of that body on the earth muſt have been prodigious.

Encyclop. art. Aſtronomy.

In this year appeared in Moravia a new diſeaſe, evidently diſtinct in its ſymptoms from any known malady, and which Thuanus has deſcribed.

This alſo was the year in which a ſudden diſeaſe ſeized the court and attendants at the Oxford aſſizes in England. Early in July, while the court was ſitting, "there aroſe, ſays Stowe, amidſt the people ſuch a damp that almoſt all were ſmothered—

very few eſcaped, that were not taken at that inſtant. The Jurors died preſently—after which Robert Bell, Lord Chief Baron. There died in Oxford 300 perſons—and ſickened there, but died elſewhere, more than 200 from the 6th to the 12th of July. After which died not one of that ſickneſs, for one of them infected not another, nor died thereof any one woman or child."

Chronicle, p. 681.

This ſudden cataſtrophe is aſcribed to a damp or vapor. But there is no need of reſorting to ſuch a cauſe. The atmoſphere, during the period under conſideration, was not furniſhed with the power of ſupporting animal life, in as ample a manner as it uſually is.—This is evident, from the univerſality of mortal epidemics. In this ſtate of the atmoſphere, a multitude, crouded into a court room, in the hot month of July, muſt ſpeedily deſtroy all the reſpirable air, and death muſt enſue. That the principal cauſe was not only local, but ſudden, is demonſtrated by the circumſtance, that no infection accompanied the diſeaſed. Had the cauſe of their illneſs been long in operation, it would have produced in the body that ſpecies of poiſon, which is noxious to perſons in health. Perſons, ſuddenly deprived of life, as by damps in wells or the fumes of charcoal, communicate no infection.

It is ſuggeſted by ſome writers, that this diſeaſe was occaſioned by an infected priſoner, who was brought from jail into court; but Stowe does not mention this circumſtance. And it is poſſible the cataſtrophe might have been owing to a ſudden diſcharge of mephitic vapor.

Scarcely had the laſt period of peſtilence come to a cloſe, when another ſeries of maladies ſucceeded, and nearly in the order of thoſe laſt deſcribed.

In 1580 appeared a comet on the 10th of October which was viſible for two months. The preceding ſummer was very moiſt and rainy, and about the riſing of the dog-ſtar, came on a cold dry north wind. In June began an epidemic catarrh in Sicily, which ſpread over Europe. In July, it was in Italy; in Auguſt, in Venice and Conſtantinople; in September, it extended over Hungary, Bohemia and Saxony; in October, on the Baltic; in November, in Norway and in December, in Sweden, Poland and Ruſſia.—Its ſymptoms were nearly the ſame, as in this country, but the diſeaſe was more violent and fatal.—In Rome, died of it 4000 people—in Lubec, 8000; at Hamburgh, 3000; and multitudes in other places. It appears to have been attended with more fever than in ordinary caſes—The fever was continual for four or five days, with a pain in the head, ſtraitneſs of the breaſt and cough—it terminated in profuſe ſweating.—In general bleeding and purging were found to be prejudicial.

Riverius, lib. 17.

In this year and about the time, when the catarrh had overſpread Europe, broke out in Grand Cairo, one of the moſt deſolating plagues ever known. Proſper Alpinus, who lived in that age, reports the number of deaths, from November 1580, to July 1581 to have been 500,000. It will be found on examination that the plague, in a ſeries of peſtilential and epidemic diſeaſes, appears in Egypt, *before* it does in Europe and America, and is nearly cotemporary with the catarrh, angina or other precurſor of the peſtilence in more northern latitudes. This fact deſerves notice. The plague which followed the catarrh in Europe, did not appear in many places, perhaps in none except in France, in the year 1580.—In northern latitudes, the malignity of the epidemic conſtitution does not appear, till the ſecond or third year, after its commencement in catarrh or meaſles.

In Paris however the plague raged in 1580, the ſame year it appeared in Egypt, and carried off 40,000 people, moſtly of the poorer ſort; and at the ſame time, it prevailed in many of the neighboring towns, eſpecially, ſays Thuanus, "at Laon in Vermandois, which city is in a poſition expoſed to a hot ſun, in which died 6000."

The hiſtorian further remarks, that the "crops that year were plentiful, and the ſky ſerene; ſo that it was thought the diſeaſe was produced rather by the influence of the ſtars, ab aſtrorum impreſſione, than by the malignity of a corrupt air." This is another proof that a ſtate of air, as deſcribed by Hippocrates, is not always the cauſe of peſtilence.

Altho this malady broke out in France in 1580, yet it had been preceeded by the catarrh. The hiſtorian remarks, that the catarrh was not ſo much dreaded for its mortality, tho many died of it, as for the aſtoniſhing rapidity with which the contagion ſpread from place to place. It ſeized the lower ſpine of the back with a chill, *horrore*; to this ſucceeded *gravedo*, a dull pain in the head; and univerſal languor or debility, reſolvens membra, looſening or unhinging the joints. If the criſis was not favorable in five days, the diſeaſe terminated in a fatal fever.

See Thuanus and Riverius, alſo lib. 17.

In 1580 conſiderable earthquakes were felt in Belgium, at Cologne and about the Mediterranean. The ſame ſhocks were felt in various parts of England, but Short places them under the following year. The German ſea was agitated, and a great ſwelling of its waters was obſerved.

See Thuanus, lib. 71, 72. Short, vol. 1. p. 260.

In 1580 alſo, the marſhes in Eſſex, and ſome parts of Kent in England, were laid waſte by mice, which were ſo numerous as to deſtroy the herbage, and a murrain among cattle ſucceeded.

In this year was iſſued a proclamation of Queen Elizabeth, upon the repreſentation of the Mayor and Aldermen of London, prohibiting any new houſe to be built within three miles of the gates of the city, and more than one family to reſide in a houſe. The reaſons aſſigned for the prohibition are connected with this ſubject. The increaſe of London had long been conſidered as an evil, by ſwelling the head too large for the body, and ſeveral attempts had been made to reſtrain the increaſe. The reſort of people to the city from the country was held to be prejudical to agriculture.

But the proclamation ſtates further, that "ſuch great multitudes of people, brought to inhabit in ſmall rooms, whereof a great part are very poor, yea ſuch as muſt live by begging, or by worſe means, and they heaped together, and in a ſort, ſmothered with many families of children and ſervants, in one houſe or ſmall tenement, it muſt needs follow, if any plague or popular ſickneſs ſhould, by God's permiſſion, enter amongſt thoſe multitudes, that the ſame would not only ſpread itſelf, and invade the whole city and confines, but a great mortality would enſue the ſame, and the infection be diſperſed through all other parts of the realm."

In this paper, we obſerve ſome powerful cauſes of peſtilence in London to be explained—and events ſhowed how little good was done by the interference of authority with private rights, and an attempt to check, by poſitive prohibitions, the natural growth of towns. This proclamation, like all which had preceded it, was uſeleſs. The city increaſed, and the plague continued to ravage it, until the good providence of God arreſted the evil, by a general conflagration, and men had become wiſe enough, to build large, airy houſes, and keep them clean.

Maitland's Hiſtory of London.

In 1582 a remarkable tempeſt is mentioned, and a comet in May. A ſevere earthquake was felt in South-America, and a ſmall city near Lima was deſtroyed.

Ulloa's Voyage, vol. 2. b. 7.

In 1583 ſeveral concuſſions of the earth were experienced in England, and the plague appeared in London. At the ſame time it appeared in Germany or Holland; as Diemerbroeck mentions this as a peſtilential year. The following winter was ſevere. In Rome there was a famin.

Maitland's Hiſt. Lond. Short, vol. 1.

In 1585 in ſpring appeared very malignant pleuriſies. In 1586 Thrace was overrun with locuſts, and the plague raged in Hungary, Auſtria and Turkey. A comet appeared in each of theſe years, and in 1586 Lima in South-America was nearly ruined by an earthquake. See Ulloa, from whom my accounts of earthquakes in Spaniſh America, are all taken.

In 1587 a very cold ſpring, but a plentiful year in moſt countries. The plague raged in Flanders, which was almoſt depopulated by diſeaſe, war and famin. In ſome parts, the wild beaſts took poſſeſſion of the houſes. Dogs ran mad, and did no ſmall miſchief, and fields were covered with weeds and buſhes. The catarrh appeared in England, this year, but how extenſively, I am not informed. An eruption of fire in Iceland is recorded under the ſame year.

In 1589 the Engliſh fleet, returned from *Portugal*, with the *Hungarian* fever, ſays Short, and introduced it into England. What an influence have *names*, and what miſchief is done by ignorance and falſe philoſophy! The Hungarian fever! As tho this fever had been a native of a particular ſoil, and tranſplanted from country to country, like a fruit-tree. Names are not always harmleſs. The name, Sudor *Anglicus*, given to the ſweating plague, becauſe it appeared firſt in England and was at firſt peculiar to Engliſhmen, has led the moderns to ſuppoſe, the diſeaſe to have been limited to England or to Engliſhmen, altho it repeatedly ſpread over all Europe. In the ſame way, the inſect which injures wheat in America, was ignorantly called the Heſſian fly, and altho the animal was never known in Germany, yet people believe, that, like yellow fever, it *was imported*. It is thus that ignorance gives currency to an improper name, and the name in turn aſſiſts to propagate and perpetuate an error.

The truth, in regard to diſeaſes, is, that they often aſſume peculiar ſymptoms; ſuch as are not uſual. Theſe are not properly *new* diſeaſes, but modifications of common fever, proceeding from the infinite variety of that cauſe of ſickneſs, which I denominate general contagion, and which Sydenham called the Epidemic Conſtitution of the air. This or other cauſes are perpetually diverſifying the ſymptoms of diſeaſes; ſo that phyſicians are often at a loſs whether to call a diſeaſe by an old or new name. Wherever the peculiar cauſes *firſt* exiſt, there will the peculiar ſymptoms of diſeaſe firſt appear—and when ſimilar cauſes exiſt in other places, the ſame ſymptoms will attend the diſeaſe.

In 1590 multitudes of people periſhed by famin. A comet approached the ſyſtem, the winter was cold, a violent earthquake convulſed Hungary, Bohemia and Vienna; near the latter place, the earth emitted an offenſive ſmell. The drouth was extreme. The Azores were ſhaken by an earthquake, and a tempeſt in September threatened to overwhelm them in maſs.

In 1591 univerſal catarrh in Europe was a prelude to moſt deſtructive peſtilence. It is ſingular alſo that the plague broke out in Narva and Revel, in Livonia, on the gulf of Finland, in the 59th degree of latitude, and raged through the ſucceeding cold winter. Six thouſand perſons periſhed in Revel. As to its origin, the great Thuanus could not decide whether it was "a belli incommoditatibus, ſive cæli inclementia," from the diſtreſſes of war, or intemperature of the air. There could have been no ſuſpicion of a foreign origin.

Thuanus, lib. 100.

Cotemporary with the catarrh was a malignant ſpotted fever in Trent. A diſtreſſing famin cauſed a great mortality in Italy.

In 1591 the plague began to ſhow itſelf in Italy, but attended with peculiar ſymptoms. A fever, little infectious, ſeized the head, inducing delirium, and in many patients, was attended with fluxes and flatulent bowels. It terminated fatally on the tenth day. The remedy was bleeding "Secta vena capitis, quæ in brachio eſt, aliiſque a capite manantibus," ſays Thuanus. It attacked chiefly men between the ages of 30 and 50; but was fatal to few women. It raged in Umbria, Tuſcany, Romagne and Lombardy, ſweeping away, in ſome towns, almoſt every man. From Auguſt to Auguſt, it was computed that 60,000 perſons periſhed.

Thuanus, lib. 102.

In 1592 the petechial fever ſpread over Florence, with a malignity that entitled it to the name of plague. It was moſt fatal to the nobles.

In England the drouth in this and the former ſummer was extreme. The Thames was fordable at London. The plague appeared in Shropſhire in the weſt, and carried off 18,000 citizens in London. Perſia ſuffered much by an earthquake in the ſame year.

Short, vol. 1. Sims on Epid. Mem. Med. Soc. vol. 1.
Maitland's Lond.

In the ſame year a furious peſtilence prevailed in Candia. It appeared in ſpring, increaſed till July and then abated. On its firſt appearance, all infected and ſuſpected perſons were removed to a diſtant hoſpital, but without effect. The diſeaſe continued to ſpread—a proof that it was an epidemic. In September, it was ſuppoſed to be extinguiſhed; but in October, it broke out with freſh violence, and the diſeaſed were confined to their houſes—a uſeleſs and pernicious regulation. The city loſt 20,000 inhabitants.

In 1594 was a ſevere winter. The years 1594, 5 and 6 were very rainy in England and Germany. Crops failed, and in Hungary, the famin was extreme.

In 1596 appeared a comet. Violent earthquakes ſhook different countries, and ſeveral cities in Japan were ſwallowed up.

In 1596 and 7 prevailed in Cologne, Weſtphalia and other parts of Germany, a ſingular diſeaſe, which authors aſcribe to the famin which had preceded. It was a malignant fever, which was attended with convulſions and raving madneſs, or delirium. Sometimes the convulſions were attended with little or no fever. The patient was contracted into a knot or ball by the violence of the convulſions, or extended to full length, like a dead body—ſometimes the extenſion of the body was ſucceeded by a contraction in the ſame paroxiſm. The particulars reſpecting this diſeaſe do not fall within the plan of this hiſtory, but may be found in Short, vol. 1.

In 1597 appeared a comet, and the ſame year the catarrh was again epidemic. Malignant fevers, accompanied with worms in youth, were predominant alſo, and the plague was in Juliers and Geneva. A dearth in England. The winter of 1597 was ſevere, as was that of 1599.

The ſummers of 1598 and 99 were remarkably dry, and ſwarms of fleas, gnats and flies abounded. Tertians, with petechiæ, were frequent, and continual fevers which yielded to bleeding and purging, or went off with a bilious diarrhea.—Small-pox and meaſles were alſo epidemic.

Theſe diſeaſes, as uſual, were the precurſors of a very diſtreſſing plague, which, in the autumn of 1598, raged in London, Litchfield, Leiceſter and other places in England. It even broke out in the ſmall towns in Wales and the northern counties, as in Kendal in Cumberland, where died 2500—in Richmond, where died 2200—at Carliſle which loſt 1196 inhabitants; and at Percrith which loſt 2266.

See Camden's Britannia.

In 1598 Pegu, in Aſia, was depopulated by famin, and Conſtantinople was almoſt ſtripped of its inhabitants by the plague.

Seventeen princeſſes, ſiſters of the Sultan, Mahomet III. died in one day. To arreſt the progreſs of this mortality, cannon were fired and aromatics burnt in all parts of the city; but with what ſucceſs the hiſtorian does not inform us.

History of the Turkiſh Empire.

In Italy an inundation of the Tyber injured Rome.

In 1599 the ſpring was cold and dry; the ſummer hot and rainy, with great floods. A very mortal diſtemper raged among cattle in Italy. In Spain and Liſbon died 70,000 people of the plague. In ſome places, a fatal dyſentery prevailed.

Short, vol. I. Sims on Epid.

SECTION VI.

Hiſtorical view of Peſtilential Epidemics from the year 1600 *to the cloſe of the year* 1700.

THE year 1600 was remarkable for peſtilence in almoſt every part of Europe. Spain, where the diſeaſe was fatal the year before, was this year almoſt depopulated. There raged throughout Europe, a peſtilential, mortal cholic which deſtroyed the lives of all whom it ſeized, within four days. The patient, as ſoon as he was ſeized, became ſenſeleſs—the hair fell from his head—a livid puſtule aroſe on the noſe, which conſumed it—the extremities became cold and mortified.

In Florence a terrible earthquake deſtroyed many buildings.

The winter of 1600 was very cold. In the ſummer of 1601 there was a ſevere drouth of four or five months ; and a violent dyſentery followed, with double tertians and continual fevers. The plague raged in Portugal, attended with black round worms. At Chriſtmas, there was an earthquake in England. The ſame year there was an earthquake at Arequipa, in Peru, accompanied by an eruption of a volcano.

In 1602 a cold and dry ſummer and winter, the catarrh was epidemic, and acute fevers prevalent. Theſe diſeaſes and phenomena accompanied a ſeries of calamities in all parts of Europe.

The famin that marked this period, for a ſeries of years, exceeded in extent and ſeverity, what had been before recorded. Famins are uſually local ; but in the preſent inſtance, there was a failure of crops for ſeveral years, in almoſt every part of Europe ; while the plague committed moſt deſolating ravages.

In Muſcovy the famin raged for three years at the beginning of the century under conſideration, attended with the plague. Parents devoured their dying children ; cats, rats and every unclean thing was uſed to ſuſtain life. All the ties of nature and morality were diſregarded; human fleſh was expoſed to ſale in the open market. The more powerful ſeized their neighbors; fathers and mothers, their children; huſbands, their wives, and offered them for ſale. Multitudes of dead were found, with their mouths filled with ſtraw, and the moſt filthy ſubſtances. Five hundred thouſand perſons were ſuppoſed to periſh in Muſcovy, by famin and peſtilence.

At the ſame time, the famin in Livonia, and the cold winter of 1602, deſtroyed 30,000 lives. The dead bodies lay in the ſtreets, for want of hands to bury them.

Thuanus, lib. 135. Encyclopedia, art. Ruſſia.

At the ſame time, raged a moſt dreadful peſtilence in Conſtantinople, which alſo followed a famin.

In England, there was alſo a dearth, and in 1603 periſhed 36,000 in London, of the plague, which was ſaid to be imported from Oſtend.

Maitland's Hiſt. Lond. Mignot's Hiſt. Turkiſh Empire, p. 256.

Even in this caſe, the report of imported infection into London was believed, altho the nation had before their eyes, a demonſtration to the contrary; for the ſame malady broke out in every part of the kingdom, and had actually prevailed in Cheſter, in the north-weſt corner of England, the year preceding.

It is idle to aſcribe the plague to infection, communicated from perſon to perſon, or from clothes to perſons. The diſeaſe, in 1602 was in every part of Europe, and appeared nearly at the ſame time, in the moſt diſtant parts. In this caſe, as in thoſe before related, of 1580 and 1591, it had been preceded by catarrh, and a courſe of malignant fevers. The malignity of the diſeaſe in 1602 reſembled that of 1348—perſons were ſeized with ſpitting of blood, and died in three days.

In Auguſt 1603 in Paris died 2000 perſons weekly of the plague. This diſeaſe was attributed to the diet and filth accumulated, under a defective police.

Wraxall, vol. 3. 438.

Why the filth of Paris did not produce the plague in other ſeaſons, writers have not informed us.

The period under conſideration was remarkable for the univerſality of the action of ſubterranean fire. The earthquakes of 1600 and 1601 and the burſting of a volcano in South-America have been mentioned. In 1603 there was an exploſion of Etna. In 1604 a ſecond eruption in Peru, and a comet.

The plague abated, in ſome places, the year following; but London was not free from it for a number of years, and from 1606 to 1609 incluſive the diſtemper carried off from two to four thouſand citizens in each ſeaſon.

In 1607 commenced an unuſual concurrence of great agitations in the elements, and ſevere peſtilence attended.

In this year appeared a comet, and another in 1609. The winter of 1607-8 was the ſevereſt that had been known for an age; boats were built on the Thames. And here for the firſt time, I am able to introduce North-America, into this hiſtory; from which will be derived ſome of the moſt important evidence in regard to the univerſality of the cauſes of peſtilential epidemics.

The ſeverity of the winter mentioned was equally great in America, as in Europe. George Popham, and a company of ſettlers under the patent of king James, to the London merchants, attempted a ſettlement at Sagadahoc in 1607; but Popham, the Preſident, died during the winter, and the extreme cold was one of the diſcouragements that contributed to break up the ſettlement.

Gorges Hiſt. New-England. Purchas, vol. 4. 1637.
Hutchinſon's Hiſt. Maſſ. vol. 1. 2.

In this ſame year was an eruption of Etna.

The comet of this year produced a moſt remarkable tempeſt, with a ſwell of the ocean, that did incredible damage in England. In the latter part of winter, the tempeſt brought in a flood into the Severn, which overflowed the country, near Briſtol, to the extent of ten miles, with a rapidity, that left no time for the people to ſave their effects, and many lives were loſt. The flood roſe above the houſes, where people had reſorted for ſafety, and overwhelmed them. The loſs of cattle and goods was immenſe.

In Somerſetſhire, the inundation laid waſte an extent of 20 miles by 10; overwhelming five towns. So ſudden was the irruption, that laborers were caught in the fields, and were ſeen floating on the timbers of their houſes. In Norfolk, the inundation was not leſs deſtructive.

Thuanus, lib. 138.

In 1608 a very malignant dyſentery prevailed.

In 1609 the approach of the ſecond comet produced effects equally remarkable with the laſt. The action of ſubterranean fire was extenſive. There was an eruption of Etna, and a violent earthquake at Lima in Peru. The winter was ſo ſevere, as to convert the Thames into a common highway.

In this year the plague was augmented in London; and it raged in Alemar and Denmark. In the years 1607 and 8, it had been very mortal in Cork.

The peſtilential ſtate of air, at this time, was experienced at ſea. The people on board the fleet under Sir Thomas Gates and Sir George Somers, bound to Virginia, were ſeized with the calenture, a ſpotted peſtilent fever, which, on board of one of the ſhips, was ſo malignant as to be called the plague. Thirty-two dead bodies were thrown out of two ſhips. Was this diſeaſe imported? In the ſame paſſage, the fleet met with a tremendous ſtorm of four days continuance, and Sir T. Gates was ſhipwrecked on Bermuda.

Purchas, vol. 4. p. 1733.

In 1610 the catarrh was again epidemic. In ſome parts of the continent prevailed the Hungarian fever like the plague, and ſevere bilious complaints. A remarkable fiery bow in the heavens was obſerved in Hungary; and Conſtantinople was infeſted with clouds of graſs-hoppers, of great ſize, that devoured every green thing. The malignant ſore throat was fatal in Spain, and authors relate that this was its firſt appearance in that country.

In 1611 the plague carried off 200,000 of the inhabitants of Conſtantinople. It appeared alſo in ſome other places. The ſummers of the three laſt years were very hot and dry.

In 1612 appeared a comet. A terrible tempeſt made great havoc with ſhipping—2000 dead bodies of ſailors were found on the coaſt of England, and 1200 on that of Holland. Some towns were injured. In the following year, Provence in France was greatly injured by an inundation; and ſwarms of locuſts ſucceeded, which laid waſte the vegetable kingdom.

The ſummer of 1612 in England was exceſſively dry, and a malignant fever ſeverely afflicted the nation.

In 1613 the plague appeared in detached parts of France, and in Montpelier, a malignant diſeaſe ſo fatal, as to want only the buboes, to prove it the true plague. It was marked with red and livid ſpots, ſwellings behind the ears and carbuncles. One third who were ſeized died.

Riverius, lib. 17.

The preceding ſummers, the earth was covered with graſshoppers, and the air filled with clouds of flies.

In this year alſo Conſtantinople was ravaged with the plague; and as cats were ſuppoſed to ſpread the infection, the phyſicians, who were moſtly Jews, adviſed the emperor Achmet I. and he accordingly ordered all the cats to be tranſported to a deſert iſland near Scutari.

Short, vol. 1. Mignot's Hiſt. Turkiſh Empire.

In 1614 the winter was ſevere; there was an eruption of Etna, and an earthquake in the Azores. The heavens appeared, at one time in a flame, and afterwards very dark.

This year was remarkable for the moſt univerſal ſmall-pox, and moſt fatal ever known. It laid waſte Alexandria, Crete, Turkey, Calabria, Italy, Venice, Dalmatia, France, Germany, Poland, Flanders and England. The mortality equalled that of the plague. In Perſia alſo it raged, with meaſles.

In 1615 the ſeaſons were cold. In 1616 a very hot and dry ſummer—quartan agues epidemic—not a family in Germany eſcaped; but not fatal.

In 1617 the ſummer was hot and dry.

In 1618 appeared a remarkable comet in November, (Short mentions four) and a town in Rhetia was overwhelmed by an earthquake. Violent tempeſts, inundations and hurricanes are recorded of the ſame year, and in Bermuda, the year following, a ſtorm tore up the ſtrongeſt trees by the roots. In 1619 Heckla diſcharged her fiery contents.

In 1618 broke out in Naples a malignant Angina which ravaged the place for many years. The plague appeared at Bergen, in Norway, in Denmark and in Grand Cairo. This was the beginning of a very peſtilential period, and here muſt be introduced the terrible peſtilence which waſted the American Indians, juſt before our anceſtors landed in Maſſachuſetts. As this is one of the moſt remarkable facts in hiſtory, and one that demonſtrates the general cauſes of plague to belong to other climates, beſides thoſe of Egypt and the Levant, I have taken great pains to aſcertain the ſpecies of diſeaſe, and the time of its appearance.

Capt. Dermer, an Engliſh adventurer, who had arrived in America, in a fiſhing veſſel, a year or two before, paſſed the winter of 1618-19 in Monhiggan, an Indian town on the northern coaſt. On the 19th of May 1619 he ſailed along the coaſt, on his way to Virginia, and landed at ſeveral places, where he had been the year before; and he found many Indian towns totally depopulated—in others a few natives remained alive, but "not free of ſickneſs;" "their diſeaſe, the plague, for we might perceive the ſores of ſome that had eſcaped, who deſcribed the ſpots of ſuch as uſually die." Theſe are his words. He found ſome villages, which, in his former viſit, were populous, all deſerted—the Indians "all dead."

Purchas, vol. 4. 1778.

Richard Vines, and his companions, who had been ſent by Ferdinando Gorges, to explore the country, wintered among the Indians, during the peſtilence, and remained untouched, the diſeaſe attacking none of the Engliſh. Belknap's Life of Gorges, American Biography, vol. 1. p. 355, but the year is not ſpecified.

Gookin, in his account of the Indians, Hiſtorical Collections, p. 8, places this peſtilence in 1612 and 13, about ſeven or eight years before the Engliſh arrived at Plymouth. But this cannot be accurate, unleſs the diſeaſe began to rage for a number of years previous to 1618. Capt. Dermer's letter in Purchas is deciſive of the time of the principal ſickneſs, and fortunately we have another authority which is indiſputable.

A ſermon was preached by Elder Cuſhman at Plymouth, in 1620, juſt after the colony arrived, and ſent to London to be publiſhed. In the Epiſtle Dedicatory which is dated December, 21, 1621, the author has theſe words. "They [the Indians] were very much waſted of late, by a great mortality, that fell amongſt them, *three years ſince*, which, with their own civil diſſentions and bloody wars, hath ſo waſted them, as I think the twentieth perſon is ſcarce left alive."

Hazard's Collection, vol. 1. p. 148.

This correſponds alſo with the accounts in Prince's Chronology from original manuſcripts. This fixes the time in 1618, preciſely agreeable to Capt. Dermer's account. This was the year of the principal mortality; but like other peſtilential periods, this continued for a number of years; for ſome of the Plymouth ſettlers went to Maſſachuſetts, (now Boſton) in 1622, to purchaſe corn of the natives; and "found among the Indians, a great ſickneſs, not unlike the plague, if not the ſame." It raged in winter, and affected the Indians only.

See Purchas 4. 1858. Prince's Chron. 124.

The time then is fixed. The diſeaſe commenced, or raged with its principal violence in 1618 and through the winter. This was the year of the remarkable comet, when the plague was raging in many parts of the world. So fatal was the peſtilence in America, that the warriors from Narraganſett to Penobſcot, the diſtance to which the diſeaſe ſeems to have been limited, were reduced from 9000 to a few hundreds.* When our anceſtors arrived in 1620, they found the bones of thoſe who periſhed, in many places, unburied.

Magnalia, book 1. p. 7.

The kind of diſeaſe is another important queſtion. Dermer ſeems to think it a ſpecies of plague, and he ſaw ſome of the ſores of thoſe who had ſurvived. Hutchinſon, vol. 1. p. 34, 35, ſays ſome have ſuppoſed it to have been the ſmall-pox, but the Indians, who were perfectly acquainted with this diſeaſe, after the Engliſh arrived, always gave a very different account of it, and deſcribed it as a peſtilential putrid fever.

Fortunately General Gookin, in the paſſage above cited, has left us a fact, which leaves no doubt as to the nature of the malady. His words are—" What the diſeaſe was, which ſo generally and mortally ſwept them away, I cannot learn. Doubtleſs it was ſome peſtilential diſeaſe. I have diſcourſed with ſome old Indians, that were then youths, who ſay, that the *bodies all over were exceeding yellow* (deſcribing it by a yellow garment they ſhowed me) both before they died and afterwards."

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* Hutchinſon ſays, 30,000 of the Maſſachuſetts tribe alone were ſuppoſed to be reduced to 300.

This account may be relied on for its authenticity and it decides the queſtion, that the peſtilence was the true American plague, called yellow fever. If any confirmation of this evidence were neceſſary, we have it in Prince's Chronology, where it is recorded that this fever produced hemorrhagy from the noſe.

At the time Gookin wrote, about forty or fifty years after the ſettlement of New-England, the infectious fevers of autumn were called "peſtilent," and they were frequent in the country, but had not then acquired the appellation of *yellow.*

Winthrop's Journal, p. 51.

This fever has been frequent among the Indians ſince the Engliſh ſettled the country. Some inſtances will be hereafter related.

The evidence then of the origin of the yellow fever in this country, between the 41ſt and 44th degrees of latitude, is complete, leaving no room for doubt or controverſy. No intercourſe exiſted, in 1618, between this continent and the Weſt-Indies; nor did a ſingle veſſel paſs between New-England and the iſlands, till twenty years after that peſtilence. Not one of the iſlands was then ſettled, except by the Spaniards, with whom our anceſtors had no commerce. Not an European was among the Indians, except a French ſeaman, who had eſcaped from a wreck a year or two before, and Mr. Vine's men, who arrived directly from England. Theſe men eſcaped the diſeaſe; none being attacked but the Indians; another evidence of the origin of the malady in the country.

In Gorges' deſcription of New-England, there is the following account of this peſtilence. "The ſummer after the blazing ſtar, which moved from the eaſt to the weſt, even a little before the Engliſh removed from Holland to Plymouth, in New-England, there befel a great mortality among the Indians, the greateſt that had ever happened in the memory of man, or been taken notice of by tradition, laying waſte the eaſt."

The author further remarks that this ſtar was much noted in Europe. In America it was ſeen in the ſouth-weſt, for "thirty ſleeps," as the Indians expreſs themſelves. The deſcription of the comet here given anſwers to that of Riverius, who repreſents it as very ſplendid, larger than Venus, moving from the eaſt to the weſt, and viſible from Nov. 27, 1618, till the cloſe of December. This was the time the peſtilence was raging among the Indians. Gorges indeed ſays, it was the ſummer *after* the blazing ſtar. It is true, that the diſeaſe continued not only into 1619, but occurred in autumn for ſome years ſubſequent. We hear of it among the Maſſachuſetts Indians in 1622. From this it appears that this was a long and ſevere period of peſtilence, between 1617 and 1623, or a later year; like the preſent period in the United States.

It muſt be remarked that in 1618, the ſame year when the Indians in America were falling a prey to this malady, the angina maligna broke out in the kingdom of Naples, and ſpread mortality over the country, as authors affirm, for eighteen years. This however is not underſtood, as affirming the diſeaſe to have been conſtantly epidemic; but as prevailing at certain times and ſeaſons.

The ſame deſtructive principle operated in Virginia. Capt. Dermer relates that when he arrived in the Cheſapeek on the 8th of September, "The firſt news ſtruck cold to our hearts, the ſickneſs over the land."* Three hundred of the ſettlers died in 1619.

It appears from Purchas that the emigrants to Virginia in 1619, 20 and 21, amounted to 3570, in 42 ſail of ſhips.† There were 600 ſouls in that colony before theſe arrived, making the whole number 4170. Of theſe, 349 periſhed in the Indian maſſacre of 1622, which would leave 3821 ſurvivors. But in 1624 no more than 1800 were living. Scanty means of ſubſiſtence might have contributed to this mortality; but moſt of it was in conſequence of fevers, that were probably the effects of the climate, and a very unfavorable ſtate of the atmoſphere.

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* Capt. Dermer was probably the firſt Engliſhman that ever paſſed through the rapids between Long-Iſland and the main land, now called Hell-Gate. He deſcribes this paſſage as a cataract, and mentions the difference in times of high water, from the eaſt and weſt.

† Mr. Jefferſon allows only 2516 perſons to have arrived in that period.

In 1620 a comet was followed by a cold winter. In England the year was diſtinguiſhed by a violent tempeſt, a preternatural tide, and a very wet ſummer. The Hungarian fever, ſo called, ſpread along the Rhine, and in the next year became infectious. London became ſickly. The year 1621 was remarkable for an epidemic malignant ſmall-pox.

In 1622 a comet is noted, and an earthquake in Italy. In New-England the ſpring was exceſſively dry, from the third week in May to the middle of July.

In 1623 the epidemic fevers in Europe became more fatal, as the period of peſtilence approached. This is obvious from the London burials, which ſhow a conſiderable increment. Riverius, who has written on the epidemic fevers of this period in the ſouth of France, obſerves that the mortality was great, until he began to bleed and purge, when it abated. He refers to the city of Montpelier, where almoſt half died who were ſeized. The diſeaſe was a ſpecies of peſtilence.

This author concurs with the ancients in aſcribing peſtilence to comets. Speaking of the ſingular ſtar of 1618, he ſays, "Hunc vero Cometam, morborum malignorum et peſtilentium, necnon etiam bellorum, quibus univerſa penè hactenus Europa devaſtata eſt, præſagium ac prenuntium fuiſſe, credere non alienum eſt."

De febre peſt. 533. fol.

The author falls into the error, which has brought into contempt the opinions of the ancient ſages, in regard to the influence of the ſtars on man, and the ſtate of the elements. He aſcribes *moral* as well as *phyſical* effects to that influence. Admitting the diſtant orbs to have ſome effect on the air or fire of our ſyſtem, and through that medium to augment or diminiſh the ſtimulus which acts on the human body and of courſe on the paſſions, by the exciting powers; yet any moral effects derived from this ſource, muſt be ſo inconſiderable, or ſo blended with the effects of other cauſes, as intereſt, ambition, love, revenge and the like, that the degree of influence could not be aſcertained, nor the effects of one cauſe diſtinguiſhed from thoſe of the ather. I reject therefore all *moral* effects aſcribed to comets; but the *phyſical* effects are, beyond queſtion, great and extenſive.

The diſeaſes of this period continued to multiply and grow more malignant in 1624, when the epidemic aſſumed the form of the ſpotted fever. In 1625 this fever turned to the plague, and in 1626 changed back to the ſpotted fever, ſays Lotichius, cited by Short. This is not an unuſual fact.

The plague in 1625 ſwept away 35,000 of the citizens of London. It raged at the ſame time in Italy, Denmark and Leyden, and how much more extenſively, I am not informed.

In this year another comet was ſeen; ſeveral cities in Spain were overwhelmed by inundations; the winter was ſevere; the ſummer, hot and moiſt weather; and there was an eruption of a volcano in Iceland. It is remarkable alſo that, in this year, a volcano burſt forth in Palma, one of the Canaries, with a violent earthquake.

The ſummer of 1626 was very hot, and the plague continued its ravages in many parts of Europe, as in Wittemburg and the vicinity; and in Lyons, which loſt 60,000 of its inhabitants. This was the prelude to more general calamity in France; for in the following years the whole country felt the diſtreſſing effects of the malady.

In 1627 and 8 the ſame diſeaſe prevailed in various other countries, eſpecially in Augſburg after a famin. In 1629 the peſtilence raged in Amſterdam. In 1630 Cambridge in England was viſited. It was a very ſickly ſummer in London, ſo that the citizens were alarmed and many retired to the country; but finding the country very ſickly, they returned.

In 1629 Pola, a town in the Venetian territories, loſt 7000 inhabitants by an earthquake.

Of the peſtilence in this period, there was hardly a ſuſpenſion. Particular countries enjoyed ſhort intervals of health; but Europe and America were ſeverely annoyed by peſtilential diſeaſes between 1632 and 1637.

In 1630 happened great exploſions of ſubterranean fire. Apulia loſt 17,000 people by an earthquake; and Lima, in South-

America, was laid in ruins by the like cataſtrophe. At this time the plague prevailed in Vienna.

In 1631 happened a memorable earthquake in Naples, with a tremendous eruption of Veſuvius, which continued or was repeated in 1632. In this eruption, Baglivus aſſures us, Veſuvius loſt 240 feet of its altitude.

Cotemporary with theſe diſcharges of fire and lava, was an eryſipelous fever in Europe with inflammation in the jaws, and an increaſe of mortality, antecedent to a general plague. See the bills of mortality for London, Augſburg and Dreſden, where the progreſs of the malignity in the epidemics, is diſtinctly marked, by an augmentation of the bills, till the plague in 1636.

In 1633 appeared a comet, which was followed by a ſevere winter. The ſame winter in America was mild, ſays Winthrop, p. 61. Southerly winds prevailed till the cloſe of winter, when there were great ſnows. It is very common that ſevere cold is progreſſive, happening in Europe one year before it does in America, as will hereafter appear.

In 1633 the year of the comet, commenced an eruption of Etna, which continued for four or five years, through this whole peſtilential period. London was ſhaken by an earthquake, and at Haliſax in Yorkſhire raged a very malignant fever.

In this year alſo a "peſtilent fever," invaded the little colony at Plymouth in Maſſachuſetts, and carried off twenty of their number. This was a great mortality for that ſmall ſettlement. It muſt have been occaſioned by a fever of domeſtic origin, as the colony had, at that time, no intercourſe with foreign countries, except with England. No ſuſpicion has ever been entertained that the diſeaſe was of foreign origin.

At the ſame time, the Indians were invaded by the ſmall-pox which ſwept them away in multitudes. It ſpread from Narraganſett to Piſcataqua, and weſtward to Connecticut river.

The ſummer of this year was remarkable for innumerable large flies, of the ſize of bees, which made the woods reſound with a humming noiſe.[*]

We have then a remarkable evidence of the extent of a peſ-

[*] Hubbard's M. S. p. 131.
Winthrop's Journal, 51—56—59—61.

tilential principle in the elements. The ſame ſpecies of diſeaſes appeared, at the ſame time, in Augſburg, Dreſden, London, and in America. Probably the ſame ſpecies prevailed over moſt of Europe; for we hear of them in every part of Holland in the following year. The diſeaſes predominant, previous to the plague, are of the eruptive kind: Such was the caſe in the preſent inſtance. In America, the epidemic among the Indians took the form of the ſmall-pox; and altho it is the current opinion that the ſmall-pox is communicated only by contagion, yet my inveſtigations have ſatisfied me that this is a great error. The ſmall-pox is one of the *family of eruptive diſeaſes*, which belong to almoſt every peſtilential period. Before its origin and progreſs had been affected by the art of innoculation, it uſed to be epidemic, in large cities, under that inflammatory condition of the atmoſphere, which originated meaſles, influenza, anginas and plague, and *rarely or never at any other time*. This diſeaſe therefore, tho communicable at any time by infection, is generated in particular habits without any infecting cauſe ab extra; and is the offspring of that ſtate of the atmoſphere which generates other eruptive epidemics.

In 1634 the plague ſhowed itſelf at Ratiſbon. The ſummer in America was hotter than uſual, and the following winter was very cold.

In 1635 the plague appeared in Leyden and 20,000 inhabitants periſhed. This year was diſtinguiſhed for an eruption of Veſuvius, violent earthquakes, an inundation in Holſtein which deſtroyed 600 people and 50,000 head of cattle, and a terrible tempeſt in America on the 15th of Auguſt O. S. which brot in a remarkable ſwell of the ocean. It will appear hereafter that moſt of the violent ſtorms and hurricanes, which ſweep the earth, happen during or near the time of the diſcharges of great quantities of fire from volcanoes. In this year, Etna and Veſuvius were both in a ſtate of eruption. The plague appeared alſo in Mentz and other parts of Germany.

In 1636 there was an eruption of Heckla. The peſtilence was general in proportion to this univerſal agitation of the central fires. In London it prevailed in 1636 after a regular increaſe of previous malignity in diſeaſes.

Of the progreſs of the peſtilence in Holland, and eſpecially in Nimeguen, we have an accurate account in the treatiſe of the able Diemerbroeck, which is by far the moſt learned and philoſophic work on the plague, that I have ſeen. Not that I believe his opinion of the cauſe of the plague; but his view of the ſubject is otherwiſe correct and worthy of univerſal attention.

In 1635 when the plague appeared in Leyden, the malignant diſeaſes, its precurſors, appeared in various parts of Holland. In Nimeguen, theſe precurſors were meaſles, ſmall-pox, dyſenteries of the worſt type, but eſpecially the ſpotted fever. The malignity of this fever increaſed, until it *changed into the real plague*—" donec in apertiſſimam peſtem tranſiret," ſays Diemerbroeck.

The plague appeared, in a few caſes, in November 1635, but made little progreſs, during the winter. In January appearances were more alarming; in March the malady ſpread rapidly and continued to increaſe till autumn. Scarcely a houſe eſcaped; more than half who were ſeized, died; and medical aid was baffled. The diſeaſe declined in the following winter, and was extinguiſhed by a ſevere froſt in February 1637.

The ſummers of 1636 and 7 were warm, the winds conſtantly from the ſouth and weſt, " cum magnis aeris ſqualoribus," ſays Diemerbroeck.

In 1635 a dyſentery prevailed in moſt parts of Germany. In 1636 the eruption from Etna was augmented, and Rome was ſeverely afflicted with the plague. In 1637 the ſame diſtemper raged in ſome parts of Holland, in Denmark, Conſtantinople and Natolia; after which year the diſeaſe declined or diſappeared.

This period of diſeaſe was alſo experienced in Virginia, where, ſays Winthrop, died 1800 people in the year 1635.

The ſummer of 1638 was very hot and dry in England, as it was in America, after a very ſevere winter, and cold ſpring.

In this year was a moſt tremendous earthquake in Calabria, memorable for the deſtruction of whole towns and the loſs of 30,000 lives.

On the firſt of June, between 3 and 4 o'clock in the afternoon, in a clear warm day, with a weſterly wind, happened a great earthquake in America, which extended from the Piſcataqua to the Connecticut, and perhaps over the whole northern region. The year was alſo diſtinguiſhed for tempeſtuous weather; not for ordinary ſtorms which occur many times every year, but violent hurricanes of vaſt extent. On the third of Auguſt a tempeſt raiſed the tide, on the Narraganſett ſhore, fourteen feet above common ſpring tides. Autumn was very rainy and conſiderable ſnow fell in October, which our anceſtors aſcribed to the earthquake. On the 25th of September, another mighty tempeſt occurred and the higheſt ſwell of the ſea that had then been obſerved in America. If I miſtake not, the ſtate of the atmoſphere, during earthquakes and eruptions of volcanoes, is peculiarly diſpoſed, not only to produce high winds, but to generate ſnow and hail.

This year was very ſickly in America. In December a general faſt was obſerved, one reaſon for which was the prevalence of the "ſmall-pox and fevers."

Winthrop, p. 165.

The ſpring of 1639 in America was very dry, there was no rain from April 26th, to June 4th, O. S. and from the ſouthward came ſwarms of ſmall flies, which covered the ſea, but they did not invade the land.

Winthrop, p. 181—184.

The plague continued to infeſt London, without interruption, from 1636 to 1648; ſee the bills of mortality; but it was not epidemic, nor very fatal.

In 1640 a hard winter, and epidemic pleuriſies were fatal in Europe. The following year, a malignant fever was epidemic, in England, and other countries.

In September 11th appeared, in the evening, a remarkable light in the heavens, about 30 or 40 feet in length; it moved rapidly and was viſible about a minute. It was ſeen in Boſton, in Plymouth and in New-Haven, and to the ſpectators every where, appeared to be in the ſame part of the heavens—of courſe muſt have been of a great altitude.

Winthrop, p. 232.

I notice this fact as it confirms the teſtimony of ancient writers, who, in deſcribing the ſeaſons and phenomena of peſtilential periods, frequently mention ſimilar appearances. This ſeems to have been of the figure of a beam, called by the Latin writers, *trabs*, but it differed from thoſe meteors diſcribed by ancient writers, in the rapidity of its motion.

In November following a ſeries of tempeſts took place, and the higheſt tide ever known at Boſton.

This ſummer of 1641 was remarkably wet and cold, ſo that a great part of the corn did not come to maturity. Thoſe who fed on it, the year following, were exceedingly troubled with worms, and ſome perſons found a remedy in leaving bread and living on fiſh.

Winthrop, p. 234.

The following winter was the moſt ſevere that had been known for 40 years. The bay at Boſton was frozen ſo that teams and loads paſſed to the town from the neighboring iſlands. The ſnow was deep, and Cheſapeek bay was nearly frozen. At Boſton, the ice extended to ſea, as far as the eye could reach. The following ſpring 1642 was early, but wet.

Winthrop, p. 240, 243.

The oldeſt Indians declared they could ſcarcely recollect ſuch a winter.

This ſevere winter was followed by a very ſickly ſummer on the Delaware river. Such was the mortality among the ſettlers from New-Haven, who had not long been in that country, that it broke up their ſettlement. The Swedes ſettled there ſuffered much by the ſame diſeaſe.

Ibm. 254.

The very wet weather of the laſt year produced a dearth of corn in Boſton, in the ſpring of 1643, and myriads of pigeons appeared alſo and did no ſmall injury, the ſame ſeaſon. It is an old obſervation, in America, that pigeons are uncommonly numerous in the ſpring of ſickly years. The Maſſachuſetts colony ſuffered alſo from the number of mice which devoured their grain, and the bark of the fruit-trees.

Several ſingular meteors were ſeen this year in the neighborhood of Boſton.*

One fact in the foregoing account deſerves notice; the extreme winter in America was in 1641-2, one year later than in Europe. Several inſtances have occurred in other periods, which ſeem to indicate a kind of progreſſiveneſs in great cold from eaſt to weſt. It often happens however that the winter is ſevere at the ſame time, in both hemiſpheres, as in 1607-8—1683-4—1762-3—1779-80.

In England, in 1643 a malignant fever was epidemic and few eſcaped. In autumn, it put on peſtilential ſymptoms and petechiæ. The ſame year, an eruption of Veſuvius and of Etna.

In 1644 a malignant fever was epidemic in Denmark.

The ſummer of 1645 being exceſſively hot, there prevailed a contagious dyſentery, which was fatal in England. For the great mortality in England, through a ſeries of years at this time, ſee the London bills.

In this year a great ſickneſs prevailed among the Indians on Martha's Vineyard—few eſcaped.

Neal's Hiſt. New-England, vol. 1. 264.

In 1646 inundations laid a part of Holland, Frieſland and Zealand under water ſo ſuddenly, as to deſtroy more than one hundred thouſand lives and three hundred villages. Gorges relates that two mock ſuns, with other ſingular celeſtial phenomena, were ſeen this year in America.

P. 41.

In 1647 May 13th, a moſt tremendous earthquake in Chili, South-America, ſunk whole mountains into the earth and nearly ruined the large city of Santiago.

Ulloa, book 8. ch. 7.

This year appeared a comet. The plague in London alſo was more ſevere, and appeared after this year to ſubſide.

In 1646 and 7 the Ukrain was ravaged by locuſts.

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* Here ends Winthrop's Journal—a circumſtance to be regretted. Hubbard's Manuſcript will in part ſupply materials for this work, for ſome years ſubſequent. But for the laſt 30 years of the laſt century, I can obtain very little information of the ſtate of the ſeaſons and health in America.

A. D. 1647. This year appeared an epidemic catarrh in *America*, and the firſt of which we have any account. It is not named either influenza or catarrh, but is clearly the ſame diſeaſe. It is thus deſcribed in Hubbard's Manuſcript, p. 276. "In 1647 an epidemic ſickneſs paſſed through the whole country, affecting the coloniſts and the natives, Engliſh, French and Dutch. It began with a cold and in many accompanied with a light fever. Such as bled or uſed cooling drinks died—ſuch as made uſe of cordials and more ſtrengthening things, recovered for the moſt part. It extended through the plantations in America, and in the Weſt-Indies. There died in Barbadoes and St. Kitts, 5 or 6000 each. Whether it was a plague, or peſtilential fever, in the iſlands, accompanied by great drouth, which cut ſhort potatoes and fruits."

This epidemic was in the ſame year with the earthquake in Chili, but the date of the diſeaſe is not recorded.

In Connecticut prevailed a malignant fever, occaſioned by the exceſſive heat of the ſummer.†

The year 1648 appears to have been leſs ſickly, in London; but in the ſouth of Europe, malignant diſeaſes were the harbingers of the plague, which in 1649 carried off 200,000 people in the ſouthern provinces of Spain. In Ireland and Shropſhire the plague prevailed in the ſame year, and a fatal fever in France. The ſmall-pox was epidemic in Boſton.

Townſend's Travels, vol. 2. 219. Short, vol. 1.
Douglas' Summary, vol. 2. 395.

In 1650 was an eruption of Etna, and an earthquake in the north and weſt of England. In this and the following year the plague continued in Ireland.

In 1650 the influenza ſpread over Europe. In 1651 many deſolating floods happened in Holland and France—in Italy, a quinſy or ſore throat proved very fatal to children. Theſe diſeaſes were ſucceded by malignant fevers, and plague in moſt parts of Europe, except in England. The ſummer of 1651 was hot.

In 1652 appeared a comet. A dangerous ſynochus prevailed in France and a tertian fever in Denmark.

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† Of this fever died the Rev. Thomas Hooker, and many others in Hartford. See Neal's Hiſt. N. E. vol. 1. 289. Magnalia, b. 3. 67.

In 1653 a ſlight earthquake occurred in New-England, in Oct.

The years 1652 and 3 were remarkably dry in England, and in 1654 public thanks were ordered for a ſupply of rain.

Mercurius Politicus.

In 1654 the plague made its appearance in Denmark. Some ſevere epidemic had prevailed in New-England; for in the ſpring of 1654 a general faſt was appointed by the government of Connecticut, one reaſon aſſigned for which was, "the mortality which had been among the people of Maſſachuſetts." What the diſeaſe was, I am not informed.

Trum. Hiſt. Con. 225.

In 1655 occurred the ſecond epidemic catarrh, recorded in the Annals of America. The following is the account of it in Hubbard's Manuſcript, p. 285.

"In 1655 there was another faint cough that paſſed through the whole country of New-England, occaſioned by ſome ſtrange diſtemper or infection of the air. It was ſo epidemical, that few perſons eſcaped. It began about the end of June. Few were able to viſit their friends or perform the laſt teſtimony of reſpect to any of their relations at a diſtance. Of this died Mr. Nathaniel Rogers, miniſter of Ipſwich."

See alſo Magnalia, b. 3. 108.

It will be obſerved that this epidemic commenced in the heat of ſummer, and that its invaſion was ſudden and univerſal. In November 1655 occurred an earthquake in South-America.

Of the ſeaſons in America I have no account; but in Europe the winter of 1654-5 was extremely ſevere. The rivers and harbors in Holland were all made faſt with ice; a ſeries of ſnow ſtorms took place in April, and as late as the 19th there was a ſevere froſt at Bruſſels.

See Mercurius Politicus, a London paper for 1655.

In March 1655 was an eruption of Veſuvius; it was very ſickly in the north of England; and there were great tempeſts of wind and hail in 1654 and 5.

In 1654 the plague appeared at Cheſter in England; but did not become epidemic; owing, it was ſuppoſed, to the precaution of confining the diſeaſed to their houſes.* At the ſame time the diſeaſe was raging in Turkey, in Preſburg, Hungary and in the city of Moſcow, it is alledged, periſhed 200,000 inhabitants. We have here preciſe and authentic evidence, that the plague appeared in Cheſter, in the north-weſt of England, in Denmark, in Ruſſia, Hungary and Turkey, in the *ſame ſeaſon.* To prove this to be the effect of a general principle, we have numberleſs authorities, in the Gazettes of that and the next year, that malignant diſeaſes prevailed over Europe. See the paper above cited. Thus when a few caſes of plague occurred in Cheſter, fatal diſeaſes prevailed over the north of England. And it is remarkable in this inſtance, that the epidemic plague appeared *in the north of Europe before it did in Italy*—an exception to the general courſe of that diſeaſe.

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* This may poſſibly have been the caſe; but it is probable the opinion is not well founded. See this point conſidered in the 16th ſection.

In 1655 the plague was more general in Europe. It prevailed in Sardinia, Malta, Leyden, Amſterdam, and in Riga, a Ruſſian port at the mouth of the Divina. There died in Riga 9000—Amſterdam 13,200—Leyden 13,000.

In 1656 the ſame diſeaſe invaded Naples, Rome, Genoa, Candia, Benevento, and moſt parts of the Neapolitan territories. In the city of Naples, periſhed three fourths of the inhabitants, and in Benevento, a greater proportion. The numbers of deaths were eſtimated as follows—

In the city of Naples died 240,000—ſurvived 50,000.

In the Neapolitan territories 400,000.

In Benevento died 9000—ſurvived 500.

In Rome about 10,000.

In Genoa in 1656, 10,000, and in 1657, 70,000, and 14,000 only ſurvived.

In Riga 9000.

In Thorn 8200.

I have not materials for a complete view of the diſeaſes of this peſtilential period. But it is to be obſerved, that influenza prevailed over Europe in 1650, and diſeaſes of the throat in Italy in 1651—diſeaſes which ſeem to precede peſtilential fevers on moſt occaſions.

The ſummer of 1656 was hot, and an earthquake in the ſouth of Italy accompanied the dreadful mortality.

See Univ. Hiſt. vol. 28. 318. Mercurius Politicus, 1656.
Encyclopedia, art. Plague.

The influenza in America was alſo ſucceeded by fatal epidemic diſeaſes, altho I have no means of determining what they were. The account recorded is that there "was a great ſickneſs and mortality, throughout New-England in 1658. The ſeaſon was intemperate and the crops light." Trumbull, p. 244. This year was alſo diſtinguiſhed for what is called in our annals, the "Great Earthquake." This is an inſtance of a violent concuſſion of the earth, in the ſame year with violent rains; but unfortunately I can find no account which phenomenon preceded the other. The ſummer was ſo rainy, that the chriſtianized Indians obſerved days of faſting, on that account, apprehending that their crops would fail and the world be drowned.

Neal, vol. 1. 259.

The introduction of the plague into Naples was aſcribed to a tranſport of ſoldiers from Sardinia. How the diſeaſe came to be in Sardinia, we are not informed. But this report, like nine tenths of all the ſtories about infection, is demonſtrably a miſtake. The account given in the hiſtory of the diſeaſe, is, that it was at firſt called by phyſicians a "malignant fever." One of the faculty, a man probably of more obſervation and firmneſs than the others, affirmed the diſtemper to be peſtilential, and for his audacity, was impriſoned by the Viceroy, who apprehended the report might injure the buſineſs and reputation of the city.

We have then another inſtance of the uncertainty in the minds of medical gentlemen, about the nature of the diſeaſe, when it firſt appeared, becauſe it was not characterized by the diſtinctive marks of the plague, the glandular tumors. This circumſtance demonſtrates that the diſeaſe was *not* imported, but an epidemic; appearing firſt, as *all great* plagues firſt appear, in the form of catarrh, inflammatory fevers, affections of the throat, and typhus fevers.

There cannot be a more clear and demonſtrable truth, than that a diſeaſe of ſpecific contagion, muſt communicate a diſeaſe of the ſame ſpecific character. If the plague has this ſpecies of contagion, it cannot communicate another diſeaſe, a malignant fever, for inſtance, which has a different character or type, and is deſtitute of the diſtinctive marks of the plague. A ſingle inſtance might occur, in which the diſeaſe might not bear the character of its original; but it is abſurd to ſuppoſe, that a plague *with* glandular tumors, can communicate and render epidemic a fever *without* glandular tumors.

Yet all ſevere plagues firſt appear in the form of ſuch fever, or other diſeaſes *without tumors*. I challenge the followers of Mead to produce an exception. Hence the uncertainty that perplexes the phyſician and the magiſtrate at the commencement of the plague—an uncertainty that has originated in the errors reſpecting the ſpecific nature of the diſeaſe and its propagation by infection—errors as fatal to great cities, as to truth and philoſophy.

Had the real origin of this diſeaſe been known, the certainty of the exiſtence of it in Naples, Venice, Rome, Vienna, Amſterdam and London, would have induced the citizens to abandon the places, before the diſtemper had made much progreſs, and multitudes of lives would have been ſaved—an expedient practiſed in America, with the moſt ſalutary effects.

In Genoa, the diſeaſe manifeſted a more diſtinct progreſſion; 10,000 died the firſt year, and about 70,000 the ſecond.

When this diſtemper appeared in Malta, Candia and Sardinia, every poſſible precaution was taken to prevent its introduction into Genoa, by ſtopping intercourſe with thoſe places; but in vain.

When the report of a malignant infectious fever in Naples prevailed in May 1656, an alarm was excited in Rome; a committee of health watched over the ſafety of that city; four of the gates were ſhut and barred; the others were guarded with vigilance to prevent any perſon from entering who could be ſuſpected of infecton; but all efforts were uſeleſs. The real truth was the diſeaſe was an epidemic, no more under the control of health laws, than the influenza and ſore throat which had preceded it.

The ſummer of 1657 in England was very hot, and ſucceeded by a long ſevere winter and deep ſnow.

In April 1658 commenced in Europe an epidemic catarrh, which was ſo ſudden in its attack as to ſeize a whole village in a night. It was ſevere and fatal to old people—its courſe was finiſhed in about ſix weeks. The ſummer was hot and fevers with vertigo and delirium, were epidemic.

See Short, vol. I. and Morton's Treatiſe.

It will be remarked that the year 1647 when the influenza invaded America, was a ſickly year in Europe. In 1655 when the plague was epidemic in Europe, the influenza again prevailed in America. In 1658 when the influenza invaded Europe, great ſickneſs and mortality occurred in America. Theſe alternations of epidemic diſeaſes will be obſerved in the ſubſequent ſtages of this hiſtory.

In 1659 prevailed the Cynanche Trachealis in America—the firſt inſtance mentioned in our annals. Magnalia, b. 4. 156.—This diſeaſe was alſo ſucceeded by malignant diſeaſes, for the Legiſlature of Connecticut in October 1662 appointed a day of thankſgiving, two reaſons aſſigned for which were, the "abatement of the ſickneſs in the country, and a ſupply of rain in time of drouth."

This was the commencement of a very ſickly period in Europe. In 1660 occurred an eruption of Veſuvius, and of a volcano in Iceland. The year was very tempeſtuous, and earthquakes ſhook England, France and America. In 1661 appeared a comet.

In 1662 another conſiderable earthquake happened in New-England; and in this year was the drouth above mentioned.—In 1663 Canada was convulſed for five months by a ſeries of ſucceſſive ſhocks—ſmall rivers and ſprings were dried up—the waters of others were tinctured with the taſte of ſulphur—an immenſe ridge of mountains ſubſided to a plain. Such were the phenomena in America which marked this peſtilential period.

Mem. Royal Society, vol. 6. 86. Neal's Hiſt. N. England.
Mem. Amer. Acad. vol. I. 263.

In 1663 a malignant diſeaſe ſeized the inhabitants of the Venetian territories and 60,000 periſhed. The country, at the ſame time, was overrun by innumerable ſmall worms.

In the ſame year, a memorable mortality occurred in England, among the cattle and ſheep, by means of a diſeaſe in which the liver was eaten by ſmall worms, and in ſome caſes, the lungs. Theſe phenomena were the precurſors of the plague in many parts of Europe. In England, all diſeaſes aſſumed new violence, as early as in 1661, preparatory to the great plague. See Sydenham. In Holland, the plague appeared at Heuſden, in 1663.

The winter of 1663-4 was mild. In the following ſummer, Pruſſia was afflicted by a malignant purple fever, attended with tumors or inflammation in the throat, very fatal to the young. Bonnetus. Med. Septen. p. 206. A ſpecies of ſcarlatina.

In 1664 appeared a comet; another in 1665, and a third in 1666. In 1664 began an eruption of Etna, which laſted, with various degrees of violence, till the year 1669, when it ended with a moſt dreadful exploſion. This period correſponds with the epidemics deſcribed by Sydenham.

In 1664 the ſummer in England was wet, and cattle died of diſeaſes. In New-England commenced the mildew of wheat, which has rendered it impoſſible to cultivate that grain, on the Atlantic coaſt of the three Eaſtern States. The winter of 1664-5, was terribly ſevere in England; the Thames was a bridge of ice, and in January happened earthquakes, in Coventry and Buckinghamſhire. During this winter inflammatory fevers and quinſies, ſays Sydenham, were more frequent in London, than were before known. Theſe gave way in May to a malignant fever, which could hardly be diſtinguiſhed from the plague, which, in June, became the controling epidemic.

Such were the phenomena of the peſtilential period under conſideration; and at this time, the plague appeared in Holland, and in England. Engliſh authors all agree that the diſeaſe was imported into England from Holland in ſome bales of cotton! O fatal bales of cotton! ſays Short. This tale has been recorded and repeated by every writer on the ſubject, without a ſingle document in evidence to prove that any cotton was imported, or that the firſt perſons ſeized had ever ſeen ſuch cotton. The whole tale reſts on aſſertion. That the ſeeds of the diſtemper were *not* imported is evident from the acknowledged facts relative to its origin; and is demonſtrated by the hiſtory of the preceding diſeaſes found in the works of Sydenham.

The origin of the peſtilence, which arrived to its criſis in 1665, is to be traced back to the year 1661, when malignant diſeaſes began to appear in different and diſtant parts of the world. In London, the intermitting tertian fever, ſays Sydenham, became epidemic, and differed from the ſame diſeaſe in other years, by new and unuſual ſymptoms, which in ſhort, amounted to this, that they were " *all more violent.*" In winter, the diſeaſe yielded, as uſual, to cold, but continued fevers prevailed every winter. Theſe fevers, with ſome variations, continued until the ſpring of 1665, and the bills ſhow how much they augmented the mortality in London. This increaſed malignity in uſual diſeaſes, with an increaſe of the number and mortality of epidemics, is the conſtant precurſor of the plague or other peſtilential fevers.

Notwithſtanding the clear evidence of theſe facts, authors have conjured up a tale of importation which would diſgrace a ſchoolboy by its inconſiſtency.* The account ſtates, " That a violent plague had raged in Holland in 1663, on which account, the importation of merchandize from that country was prohibited by the Britiſh Legiſlature in 1664. Notwithſtanding this prohibition, *it ſeems the plague had actually been imported;* for in the cloſe of 1664, two or three perſons died ſuddenly in Weſtminſter, *with marks of the plague on their bodies.*—Some of their neighbors, terrified at the thoughts of their danger, removed into the city; but too late; for they ſoon died of the plague, and communicated the infection to others. It was confined however through a hard, froſty winter, till the middle of February, when it again appeared in the Pariſh of St. Giles, to which it had been originally brought; and after another long reſt, till April, ſhowed its malignant force afreſh, as ſoon as the warmth of ſpring gave it opportunity. *At firſt, it took off one here and there, without any certain proof of their having infected each other.*

Encyclopedia, art. London. 21.

In the ſubſtance of the foregoing ſtatement, all authors are agreed, and I want no other proof that the report of the importation of the diſeaſe is all a vulgar, childiſh tale, the propagation of which is a diſgrace to philoſophy and to the faculty of that age.

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* If this language ſhould be thought too ſevere, I can ſincerely ſay, that in my opinion, no language can be too ſevere for the careleſſneſs which has originated a ſyſtem of error on this important ſubject.

In the firſt place we have no authentic evidence in any author, that any bales of cotton were brought from Holland to London, at that time. The whole aſſertion reſts on vulgar report, and is wholly unſupported by proof—had the report been well founded, the fact might have been aſcertained, and in an affair of ſuch magnitude, probably would have been. The importation of goods from Holland was prohibited by act of parliament.

In the ſecond place, the diſeaſe firſt appeared in Weſtminſter, not in the commercial city of London, but in a place where bales of cotton would be the leaſt likely to be depoſited and opened; Weſtminſter being the reſidence of the nobility and gentry, rather than a place of commerce.

In the third place, no proof is ſtated that the perſons firſt ſeized had any connection with bales of cotton.

In the fourth place, the death of two or three perſons, with the plague-marks on their bodies, in December 1664, is no evidence of any imported infection at that time; for the bills of mortality ſhow, and the reader is deſired to turn to them, to be ſatisfied, that a ſmaller number died that year of the plague, than had died of it in any of the ſix preceding years. In the year 1659 died of that diſeaſe 36—in 1661 died 20, and every year more or leſs. In 1664 died but 6 of the plague, and yet this number, ſmall as it was, muſt be proof of the importation of infection, *that year*, when *greater numbers*, in preceding years, are paſſed over in ſilence! In ſuch accounts, there muſt be want of knowledge, or want of honeſty. The plague imported from Holland! when the city of London had not been free from it, for 28 years preceding! See the bills of mortality!—

Beſides, why in the name of common ſenſe, ſhould "two or three," infected perſons in 1664, ſpread the plague over London, and deſolate the city, when twelve, fourteen, twenty and thirty-ſix infected perſons, who died in preceding years, produced no ill effects? To account for ſuch effects on the principle of *infection*, is not poſſible; and men of ſcience ought to be aſhamed of ſuch abſurdities.

In the fifth place, the ſuſpenſion of the diſeaſe, during ſix weeks, is evidence, that infection had no agency in ſpreading the diſeaſe. It is a fact known and acknowledged, that *infection* cannot be preſerved, for a tenth part of that time in the open air. Air diſſolves the poiſon of any diſeaſe, in a very ſhort time. Infection can only be preſerved in confinement, as in cloſe veſſels or packages of goods. The walls of an infected houſe will be cleanſed by the action of air, in a very few days, ſo as to be perfectly harmleſs. During the ſix weeks ſuſpenſion of the plague in London, where was the infection concealed to preſerve it from air and froſt ?

Was the fomes ſhut up by deſign for a few weeks and then ſet at liberty ? Had the perſons who were firſt ſeized in February, any acceſs to the infected houſes or clothes of thoſe who died in December ? Is this probable ? There is no ſuggeſtion of this ſort.

Then again another interval of ſeveral weeks elapſed from the death of thoſe in February, before others were ſeized. It is not ſolely improbable ; but I aver, that the fomes or infecting principle of no diſeaſe whatever, can be ſuſpended in a ſtate of inaction, in the open air, and afterwards give riſe to diſeaſe. Unleſs therefore it can be proved that the perſons who died in April had acceſs to infection, which had been cloſely confined from the air, they could never have received the diſeaſe from the virus generated in February or December. Now it appears from the ſtatement, that the perſons, ſeized in February, lived in a different part of the city, from thoſe who died in December, and no ſuggeſtion that they had an intercourſe with any infected object.

But the laſt ſentence of the ſtatement diſproves fully all aſſertions and ſuſpicions reſpecting infection. It ſeems that when the diſeaſe ſhowed itſelf in ſpring, it ſeized one here, and another there, in ſcattered ſituations, " without any certain proof of their having infected each other." This is uſually the caſe in the plague, and in the yellow fever, in the ulcerous ſore throat, the dyſentery and other contagious, epidemic diſeaſes. The whole myſtery is, that any diſeaſe will *firſt* ſeize the conſtitutions leaſt capable of reſiſting that ſtate of air, from which the diſeaſe proceeds. One perſon will ſuſtain a vitiated air, for one day only; another for two days, and a third for a week, before his conſtitution yields to the deſtructive principle. It is preciſely with the acceſs of the plague, in a city, as with a company of men going from a healthy ſituation, into a marſhy place—one man will be ſeized very ſpeedily with the ague and fever; another will ſuſtain his health for a week or two, and ſome perhaps eſcape unaffected. This example explains the phenomena which attend the invaſion of peſtilence, as related by Evagrius, Diemerbroeck and others, and which will be more fully diſcuſſed in a ſubſequent ſection.

The account therefore of the origin of the plague in London in 1665, not only does not prove the diſeaſe to have proceeded from imported fomes, but actually demonſtrates the impoſſibility of the fact.

But we have better evidence than the popular accounts afford us, that the diſeaſe was generated in the city of London. Sydenham has left facts on record, which place this point beyond controverſy.

After deſcribing the multiplied diſeaſes of increaſed malignity, which prevailed in London, from 1661 to 1665, and which ſwelled greatly the bills of mortality in that city, he informs us that in May 1665 he was called to aſſiſt a woman of a ſanguine habit, who was ſeized with violent fever and frequent vomitings. He was ſurpriſed at the ſingularity of the ſymptoms, and puzzled to know how to treat the diſeaſe. The woman died the 14th day. He obſerved her face, during the fever, to be red, and that a little before her death, a few drops of blood iſſued from her noſe. Theſe and other circumſtances ſuggeſted to him the uſe of bleeding, and his next patient recovered.

This ſpecies of malignant fever ſoon ſpread and towards the cloſe of May and beginning of June, became epidemic. Soon after appeared the true plague with its characteriſtic ſymptoms. After ſtating theſe facts, Sydenham ſays, "Whether the fever under conſideration deſerves to be entitled a plague, I dare not poſitively affirm; but this I know by experience, that all who were then ſeized with the true plague, attended with all its peculiar concomitants, and for ſome time afterwards, in my neighborhood, had the ſame train of ſymptoms, both in the beginning and through the courſe of the diſeaſe."

He then obſerves that he attended ſome perſons with the true plague, and afterwards, he ſaw ſeveral caſes of a ſimilar fever.
See chap. 2. ſect. 2.

Had not the faculty been blinded to truth by their theory of *ſpecific contagion*, it would not have been poſſible ſo long to overlook the *progreſſiveneſs* of the plague, which not only Sydenham, but many phyſicians of the 16th and 17th centuries obſerved and recorded.

The malignant diſeaſes which prevailed from 1661 to 1664 marked a *peſtilential ſtate of air* in London. We now know what Sydenham could not know, that this unhealthy ſtate of air extended not only over Europe, but over Perſia and America. But the malignant fever which appeared in May, as deſcribed by Sydenham, was the *firſt ſtage of the plague*, or mild form of the diſeaſe, which *always* precedes that ſtate of it which is characterized by buboes. This form of the diſeaſe appears before the ſeaſon or ſtate of the atmoſphere is advanced ſufficiently to give the deſtructive principle its full force.

The ſame ſpecies of fever preceded the terrible plague in Venice and in Naples, as before related; and this is always the cauſe of uncertainty and controverſy reſpecting the nature of the diſeaſe, at its commencement. And it is remarkable that this milder form of the plague, often rages for many months, before the diſeaſe arrives to its criſis. Thus in London, the peſtilential principle produced a few caſes of real plague, in the winter of 1664-5. The caſes muſt have occurred in conſtitutions more irritable, or ſuſceptible of the cauſe, than bodies in general; or the perſons muſt have been expoſed to the action of powerful local cauſes, or to extreme debility. The ſevere froſt doubtleſs ſuſpended the operation of the peſtilential principle—but on the opening of ſpring, the operation began, and proceeded from the malignant epidemic of May to produce the moſt deadly effects.

I have one obſervation further to make on this ſubject. It has been alledged and generally admitted that the plague was introduced into Amſterdam, in 1663 by a veſſel from the Mediterranean. It is probable that if this queſtion could be fully canvaſſed, the popular belief would appear to have had no better foundation, than many opinions in America, in regard to the importation of the yellow fever, which are proved to reſt merely on conjectures, ſuppoſitions, and vague reports. But in regard to the origin of the peſtilence in Holland, in this inſtance, it is wholly immaterial, whether popular opinion was well founded or not; for we have the expreſs authority of Diemerbroeck, that anterior to the arrival of the ſhip, with the ſuppoſed infection, the plague broke out in Heuſden, a town on a branch of the Meuſe, ſurrounded by a moraſs, not a maritime place. Beſides the ſpotted fever, which precedes the plague and turns into it, had been prevailing in all parts of Holland in the preceding year. The peſtilence therefore originated in Holland, *before the infection arrived;* and the tales of importation vaniſh in ſmoke.

According to the bills of mortality, London loſt upwards of 68,000 inhabitants by the plague in 1665, and more than 28,000 by other diſeaſes. As the 28,000 deaths by common diſeaſes muſt have occurred moſtly in the ſix firſt months of the year, before the plague raged, this circumſtance ſhows what a great increaſe of mortality preceded the plague. With ſuch evidence before their eyes, how can diſcerning men look abroad for the ſources of the malady!

It ſhould alſo be remarked that this calamity among the human race was preceded by a great mortality among cattle in 1664.

It muſt not paſs unobſerved that the ſummer of 1665 in England was very temperate, the weather fine and the fruits good. All the writers of that day agree, that no cauſe of peſtilence could be obſerved in the viſible qualities of the ſeaſon.

This was the laſt plague that has appeared in London, or in Great Britain. The diſappearance of the plague in that and other countries, is a moſt conſoling fact, and one that has not a little engaged the minds of philoſophic men, to diſcover the cauſe. The cauſes uſually aſſigned are, the deſtruction of the city by fire in 1666, the more airy, convenient conſtruction of the modern city, the introduction of freſh water, with more cleanlineſs, and improved habits of living.

Theſe reaſons would have more weight in my mind, if the other large cities in England, in France, Spain, Holland and Germany, which have neither been burnt nor improved in their general ſtructure, had not alſo eſcaped the ravages of peſtilence. But as the plague has not viſited Paris and Amſterdam, which retain their ancient conſtruction, no more than London, which has been improved, we muſt reſort to other circumſtances for the cauſes of this exemption. The conſideration of this ſubject will fall under another part of this work.

In 1666, appeared a comet, the ſummer was very hot, and a tremendous hurricane, tore up a thouſand trees in Nottingham foreſt, and of 50 houſes in one village, ſeven only were left ſtanding. In this tempeſt fell hail-ſtones, as large as hens eggs. An earthquake occurred in Oxfordſhire. Perſia did not eſcape the effects of this peſtilential conſtitution. In 1667 prevailed famin and epidemic diſeaſes, and an earthquake demoliſhed great part of Teflis, the capital of Georgia, and four villages, with the loſs of 30,000 lives; and another city with the loſs of 2,000 lives.

Chardin's travels, 86. 126.

In 1666 dyſentery prevailed over England and many parts of Europe and in St. Domingo. This diſeaſe ſeems to be the ſucceſſor of the plague, and other epidemics. During the inflammatory ſtage of an epidemic conſtitution, evidenced by meaſles, influenza, a mild ſmall-pox, we rarely hear of deſtructive dyſentery. But after thoſe diſeaſes have run their courſe, dyſentery appears in many parts of a country, and ſometimes becomes almoſt univerſal. It would be a curious queſtion, by what means the inflammatory diatheſis, ſo to ſpeak, of the epidemic period, acts upon the nerves, muſcles and inteſtines, to give to the ſubſequent autumnal fevers this particular direction.

During the foregoing ſeries of epidemics in Europe, America did not eſcape. Slight ſhocks of earthquake were felt in 1660, and in 1665. Great ſickneſs prevailed at this period alſo, but I am not informed of the ſpecies of diſorder, except the ſmall-pox in Boſton in 1666.

In 1668, appeared a comet with a ſtupendous coma. This was attended by an exceſſively hot ſummer, and malignant diſeaſes in America. In New-York the epidemic was ſo fatal, that a faſt was appointed in September, on that account. This was undoubtedly the autumnal bilious fever in its infectious form. In this ſame year was an earthquake in America, and a meteor in the weſt, in form of a ſpear, pointing towards the ſitting ſun, which greadually ſunk and diſappeared.

Neal's Hiſt. vol. 1. 367. Magnal. b. 4. 184.

This year was marked alſo by violent earthquakes in Europe and Aſia. The winter of 1668-9 was very ſevere, and ice was ſeen in the Boſphorus; that of 1670 covered the Danube with a bridge of ice.

In winter appeared in Hungary two mock-ſuns of reſplendent brightneſs—the infallible forerunner of great diſcharges of electrical fire, or of violent tempeſts.—On the 11th of March 1669, the eruption of Etna which had commenced in 1664 redoubled its fury, and by immenſe diſcharges of lava laid waſte the country below. Its violence ſubſided in July; but tremendous hurricanes marked the year. The ſummer of this year alſo was exceſſively hot.

In this year, the cats in Weſtphalia died with an eruption on the head, accompanied with drowſineſs. In England prevailed a dangerous fever, with ſlimy tongue and ſore mouth.

In Norway prevailed meaſles of a malignant kind, attacking old and young. Bonetus, Med. Sept. 223.—In the two following years meaſles was epidemic in London alternating with the ſmall-pox.—See Sydenham.—In 1673 winter was cold; and catarrhs were frequent with ſpotted fevers—A comet appeared in the preceding year.

In 1675 a wet and cool ſummer, the influenza prevailed in Europe with the uſual ſymptoms. In Italy was ſeen a meteor or fire ball, from the north-eaſt; and the following winter in America was colder than uſual.

The ſummer of 1676 in England was cold. Meaſles and ſmall-pox prevailed in ſome places.

In 1677 was ſeen a comet in April and May; an earthquake was experienced in England; and in Charleſtown, Maſſachuſetts, raged the ſmall-pox with the mortality of a plague.

Mag. b. 4. 189.

The ſummer of 1678 was very hot and dry. There was a comet and an earthquake in Lima. Fevers and affections of the throat were epidemic in the north of Europe. The plague raged with moſt deſolating fury in Algiers and Morocco. Authors relate that four millions of people periſhed, and that the waſte of population has not ſince been repaired.

Cheniers Morocco, vol. 2. 180.

On the 12th of January occurred in England a moſt extraordinary darkneſs, at noon.

Notwithſtanding the barrenneſs of my materials, this peſtilential period may be very clearly diſtinguiſhed, by the meaſles from 1669 to 1672 with the ſmall pox, the catarrh of 1675, the ſubſequent malignant fevers and affections of the throat, and finally the peſtilence of 1678.

The ſame deleterious principle extended to America. Our annals relate that the ſeaſons were unfavorable and the fruits blaſted, while malignant diſeaſes prevailed among the people. The ſickneſs and bad ſeaſons were attributed, by our pious anceſtors, to the irreligion of the times, and to their diſuſe of faſting. On this occaſion, a ſynod was convened to inveſtigate the cauſes of God's judgments, and to propoſe a plan of reformation. The ſmall-pox prevailed at Boſton in 1678, and a ſingular epidemic in England, France and Holland.

See Neal's Hiſt. N. Eng. vol. 2. 32. Mag. b. 5. 85.
Hutch. vol. 1. 324. Doug. vol. 1. 440. Short, vol. 2.

The comet of 1678 was followed by a very cold winter, after a rainy autumn, with an epidemic cough. A comet is mentioned in 1679, and the plague was in Vienna.

The year 1680 was diſtinguiſhed alſo for a ſevere winter, and the noted comet that had appeared in Juſtinian's reign. In Dreſden raged the plague. The ſummer was hot and ſickly.

A large meteor was ſeen in Germany, deſcending to the north and leaving behind it a long luminous ſtream.

The ſummer of 1681 was exceſſively dry. This was the forerunner of violent earthquakes, which, in 1682 ſhook all Germany, Italy and Switzerland. In ſome places, the ſhocks were preceded, for four nights, by lights or flame, like ignes fatui, on the mountains. The convulſions were attended with a diſagreeable ſulphurous ſmell. In this year alſo was viſible a comet, and an eruption took place, both of Etna and Veſuvius.

In this year 1682 a mortal diſeaſe ſpread among the cattle in Italy, Switzerland and Germany, that was called the angina maligna, and of which cattle died in 24 hours. Authors relate that a blue miſt appeared on the herbage of paſtures. The diſeaſe moved about two German miles in 24 hours, and ſpread over Germany and Poland. Cattle at rack and manger were affected equally with thoſe that grazed.

At Halle in Saxony prevailed the plague; and at Dublin, a petechial in which the brain was ſeverely affected, and bleeding pernicious.

The diſcharges of fire already mentioned were productive, as uſual, of violent winds. In Sicily, a tempeſt, preceded by great darkneſs, almoſt laid waſte the iſland.

In 1683 was an earthquake in England, in September, preceded by meteors or lights and fetid exhalations. A comet appeared in this year, and another in the following.

The winter of 1683-4 was the coldeſt that could be recollected by the oldeſt men living. Trees of large ſize ſplit with the froſt. The ſame winter was exceſſively ſevere in America, and from a paſſage in a letter of the Rev. John Eliot, the ſeaſon appears to have been ſickly.

Hiſt. Col. vol. 5.

The year 1683 was alſo remarkable for general ſickneſs in Connecticut, and in ſome places, unuſual mortality. Some towns ſuffered by exceſſive rains.

Trumbull's Hiſt. p. 383.

Theſe unuſual ſeaſons were accompanied with ſingular diſeaſes. In Leyden in 1683 prevailed what was called the hungry fever, which came on with a chill, ſucceeded by ravenous hunger, To gratify this appetite was fatal. When the hot fit came on, the hunger ſubſided. In 1684 was a terrible earthquake in St. Domingo.

Deſcription of St. Domingo, vol. 1. 142.

After the ſevere froſt in 1684, a malignant dyſentery raged over Europe. This and the two ſucceeding ſummers were hot and dry. In 1685 Languedoc in France was overrun by graſshoppers, and the petechial fever was prevalent.

In September 1686 was ſeen a comet. At Lille in France, fell a ſtorm of hail, the ſtones of which were of a pound weight. There was an eruption of Etna, in this year alſo, and a meteor was ſeen at Leipſick on the 9th of July, which was ſtationary for 7 minutes, at the height of 30 miles. It is curious to remark the coincidence in time between the phenomena of the electrical fluid, tempeſts, ſnow and hail.

The ſummer of 1687 in Europe was very rainy. In October the city of Lima in Peru, was demoliſhed by an earthquake.

The winter of 1688 was cold, and in the ſummer following epidemic catarrh ſpread over Europe. This was preceded by a diſeaſe of the ſame ſpecies among horſes, attended with a defluxion of rheum from their noſes. Swarms of inſects in ſome countries announced a peſtilential period. In the interior of Germany were ſome dyſenteries. An earthquake was experienced at Naples, and Smyrna was laid in ruins.

In 1689 appeared a comet, and both Etna and Veſuvius diſcharged fire. The autumn was very rainy, and the ſpotted fever prevailed in ſome parts of Germany. In Boſton the ſmall-pox was epidemic.

In 1690 the ſummer was rainy, frogs were in unuſual numbers in Italy, and corn was cut ſhort by mildew. Rainy ſeaſons generally ſucceed great eruptions of volcanoes and earthquakes.

The year 1691 commenced with ſevere froſt, followed by a hot dry ſummer. The ſpotted fever prevailed in Italy, in which bleeding was fatal. There was alſo great mortality among cattle and ſheep.

The ſeaſons in this year were peculiarly unfavorable in America, altho I am not able to deſcribe them. It appears from the journals of the aſſembly of New-York, that upon an addreſs of the houſe to the governor and council, a monthly faſt was appointed to be obſerved from September 1691 to June 1692; the ſpecial reaſons aſſigned for which were, "a burthenſome war, and a blaſt upon the corn." This is a remarkable fact, and not unfrequent, that at one and the ſame time, the powers of vegetation fail in the moſt diſtant parts of the earth. Perhaps we ſhall be able to account for this inſtance of a deranged ſtate of the elements by the univerſal exploſions of fire in the two following years. St. Domingo experienced a ſevere earthquake in 1691, in the year of this blaſt on the corn.

Deſcription of St. Domingo, by Moreau St. Mery, vol. 1. 142.

On the 7th of June 1692 after a ſeries of dry, hot, calm weather, a moſt dreadful earthquake ſuddenly ſunk the town of Port-Royal in Jamaica, and demoliſhed moſt of the buildings on the iſland, with the loſs of 2000 lives. After the earthquake, the heat was ſtill more intenſe, muſquetoes were innumerable, and a malignant fever fell upon the inhabitants in all parts of the iſland, with which 3000 periſhed.

In the ſame year, a ſimilar diſeaſe invaded Barbadoes, and afflicted the iſland for many years. Indeed the whole world was ſickly.

On the 8th of September England, Holland, France and Germany were convulſed by an earthquake, and Switzerland felt a ſhock in October. In the ſame year was an eruption of Etna, and great ſnows followed.

The ſpotted fever continued its ravages; and it was remarked to be much more malignant and fatal in the wane of the moon. During an eclipſe in 1693 the ſick almoſt all died. The diſeaſe was more fatal in town than country.

I have no account of the diſeaſes in Egypt or the Levant, during this period; but it will be found on examination that great peſtilence raged in thoſe places, about this time, or between 1689 and 1693.

On the 10th of January 1693 happened a moſt terrible earthquake in Sicily and Naples. On the preceding evening, was obſerved a great flame or light, apparently at the diſtance of an Italian mile, and ſo bright as to be miſtaken for a fire. The ſpectators attempted to approach it; but it appeared ſtill at the ſame diſtance. As ſoon as the earth began to ſhake, the flame diſappeared.

It is not within my limits to enumerate the miſeries occaſioned by this concuſſion of the earth. Suffice it ſay that many towns were laid in ruins and 60,000 people periſhed. During the convulſion a fountain diſcharged its waters as red as blood. This calamity was preceded by a ſerene ſky, and followed by darkneſs or vapor of a reddiſh or yellow hue.

The effects of this earthquake were remarkable on the human body. Among theſe were malignant fevers, ſmall-pox fatal among children; madneſs, dullneſs, ſottiſhneſs and melancholy, with deliria and lethargy. Are not theſe effects produced by an exceſs of ſtimulus, occaſioned by the ſuperabundance of electricity?

The ſummer following this convulſion of the earth, was intemperately wet and cool, and corn was mildewed. Another account ſays the ſummer in Italy was very hot and dry. The ſpotted fever, and in ſome places dyſentery were very mortal. Wounds degenerated into ulcers, and bliſters were followed by mortification which proved fatal to many.

In this year alſo Etna in Sicily, and Heckla in Iceland diſcharged fire and lava; a new volcano was opened in Aſia, and an iſland, called Sorea, near the Moluccas, was ruined by its volcano.

Moſt dreadful ſtorms marked the ſame year; one in America, on the 19th of October, was memorable for its violence.

An epidemic catarrh began in Europe in October, being preceded by a ſimilar diſeaſe among horſes.

The preceding winter was probably very mild in America; for on the 13th of February, Gov. Fletcher, with a body of troops, ſailed from New-York for Albany.

Smith's Hiſt. New-York, 82.

In 1693 the ſeamen and ſoldiers, under Sir Francis Wheeler, who was ſent to conquer Martinico, were ſeized with the plague of America, and three fourths of them periſhed. Hutchinſon, vol. 2. 72, relates that this fleet came to Boſton and introduced the diſeaſe into that town, where it occaſioned a deplorable mortality. Douglas relates the ſame fact.

This account ſeems to be contradicted by Mather, in his Magnalia, b. 1: 22. In a ſermon delivered on lecture day, April 7, 1698, it is aſſerted in ſo many words, that "An Engliſh ſquadron hath *not* brought among us the tremendous peſtilence, under which a *neighboring plantation* hath undergone prodigious deſolations. Boſton, 'tis a marvellous thing a plague has *not* laid thee deſolate."

By comparing the date of this ſermon, with other events related in it, I find there is no miſtake in the date; and as the author lived in Boſton, and was cotemporary with theſe events, and perſonally acquainted with Sir Francis Wheeler, I conclude it was not Boſton, but ſome other ſea port town, which ſuffered by the arrival of a fleet.

In the 2d book of Magnalia, p. 71, the ſame author mentions this expedition and the terrible mortality. He ſays the diſtemper was "the moſt like the plague, of any thing that had ever been ſeen in America, whereof there died *before the fleet could reach to Boſton,* as I was told by Sir Francis himſelf, 1300 ſailors out of 2100, and 1800 ſoldiers out of 2400."

In book 7. 116, the ſame author ſays, "there was an Engliſh fleet of our good friends with a direful plague aboard *intending hither.* Had they come, as they intended, what an horrible deſolation had cut us off, let the deſolate places, *that ſome of you have ſeen in the colonies of the ſouth,* declare unto us. *And that they did not come was the ſignal hand of heaven.*" This paſſage is in a lecture preached on the 27th of September, 1698.

From this authentic hiſtory, written by a cotemporary clergyman, we infer that Hutchinſon muſt have made a miſtake. Sir Francis Wheeler's fleet arrived at Boſton, moſt dreadfully infected, but no diſeaſe was propagated in Boſton. Some other fleet, it ſeems, had introduced the diſeaſe into a "colony of the ſouth," perhaps Newport or New-York, but I have no information on the ſubject.

The great diſcharges of fire and earthquakes of 1693, were followed, as uſual, by an intenſely cold winter. The ſucceeding ſummer of 1694 was hot and exceſſively dry in Italy, till October, when the earth was deluged with rain.

In May was a violent earthquake and volcano in Banda, an iſland in the Indian ſeas. Fire iſſued from the neighboring ſeas, the air was impregnated with the ſmell of ſulphur, and ſickneſs prevailed. An eruption of Veſuvius happened the ſame year, and violent earthquakes in Sicily and Calabria. In this year the agitations of fire ſeem to have ſubſided; and as uſual, a ſeries of rainy cool ſummers ſucceeded, in which corn periſhed or was blaſted, crops failed, and univerſal dearth enſued.

One of the moſt remarkable effects of the late agitations of the elements, was the frequency of apoplexies in Italy. So common were they in 1695, as to be called epidemic, and occaſion general conſternation. This is not an infrequent conſequence of the high excitement that takes place in peſtilential times, ending in extreme debility in the brain. Something of this kind has been obſerved in America, within the laſt few years.

I have very few facts in regard to the ſeaſons and diſeaſes in America, during this period, from 1689 to 1695. It appears however that the diſorders of the elements were experienced in America.

In 1695 prevailed a mortal ſickneſs among the Indians in the eaſtern parts of this continent.

Hutch. vol. 2. 87.

A contagious fever prevailed in Bermuda, the ſame year.

In Europe many malignant fevers prevailed, but no epidemics, except meaſles and chin cough of a bad type. In Ireland appeared offenſive fogs, a thick clammy dew on the herbage, of a yellow color, and conſiſtence of butter. A ſimilar ſubſtance was obſerved at Middletown, Connecticut, on the morning after the earthquake, May 17, 1791.

The year 1696 was cool and wet—ſummer in Britain, reſembled winter, and winter was like ſummer. Corn was mildewed. Dyſentery fatal among children.

In America the winter of 1696-7, according to Hutchinſon, was very ſevere. Loaded ſleds paſſed from Boſton to Nantaſket. Food was ſcarce and loſſes at ſea very great. I am not without ſuſpicions however, that the author has here deſcribed the following winter, which was as ſevere as he has repreſented it.

In 1697 the weather in Europe was moſtly cool. An earthquake at Lima in Peru ſhook the country with terrible violence.

In a diary kept by Daniel Fairfield, of Braintree, in Maſſachuſetts, an unlettered man of good underſtanding, I have a particular deſcription of an influenza that prevailed in America in the ſevere winter of 1697-8.* This catarrh began in November and prevailed till February. Its violence was in January, when whole families were ſick at once, and whole towns were ſeized nearly at the ſame time. It appears to have been an epidemic of the ſevere kind; and the epidemics which followed it in America were of correſpondent ſeverity.

In the ſame winter a mortal diſeaſe raged in the town of Fairfield in Connecticut, which was ſo general, that well perſons could ſcarcely be found to tend the ſick and bury the dead. Seventy perſons were buried in three months, altho it may be doubted whether the town then contained 1000 inhabitants.

M. S. letter from Dr. Trumbull.

In the ſame winter raged a deadly fever in the town of Dover, in New-Hampſhire.

M. S. of the Rev. John Pike.

This diſeaſe was doubtleſs that ſpecies of inflammatory fever, attacking the brain and ending in typhus, which has often proved a terrible ſcourge to particular parts of America, during the rage of peſtilence in the eaſt, and of other epidemics in this country. We ſhall hear of it in the following century, and eſpecially in 1761.

On the 20th of June 1698 the town of Latacunga, in the province of Quito, nearly under the equator, was laid in ruins by an earthquake, as were Riobamba, Hambato and other towns in the ſame diſtrict. In one place a chaſm of five feet broad and a league in length, was opened, and on a mountain happened a volcanic eruption, from which iſſued aſhes, cinders and flames.

Ulloa, vol. 2.

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* For this and many other articles of intelligence, I am indebted to the late Dr. Jeremy Belknap, whoſe value as a man and as a hiſtorian many years friendſhip and correſpondence had taught me to appreciate, and whoſe loſs to ſociety and the republic of letters, I moſt deeply lament.

The malignant fever, already mentioned, whatever might have been its preciſe ſymptoms, was ſoon followed by more general ſickneſs. In 1699 raged in Charleſton South-Carolina and in Philadelphia, the moſt deadly bilious plague that probably ever affected the people of this country.

Mr. Norris of Philadelphia has kindly favored me with a ſight of a number of M. S. letters of his grand-father Iſaac Norris, written during the ſickneſs, to his correſpondents. This worthy gentleman was then in trade, and well acquainted with the facts reſpecting the diſeaſe, as his own family ſuffered a loſs of ſeveral of its members.

In a letter dated Auguſt 15, 1699, he mentions, that a malignant fever broke out about the beginning of Auguſt, which he deſcribes as the "Barbadoes diſtemper," tho he gives no intimations of its being communicated from countries abroad by infection. He ſays the patients "vomited and voided blood."

On the 24th of Auguſt, arrived the Britannia from Liverpool, which had been 13 weeks on her paſſage; ſhe had 200 paſſengers on board—had loſt fifty by death, and others were ſickly.

September 1ſt, he writes that the diſtemper appeared to abate at one time, but afterwards revived. He mentions the ſummer to be the hotteſt he ever knew; men died at harveſt in the field. All buſineſs in the city was ſuſpended.

During the yearly meeting the diſeaſe abated, but the meeting was thinly attended. Afterwards the diſeaſe returned in all its violence.

October 9th, he writes that he had hoped the cool weather would have relieved the city, but it did not.

October 22d, the diſeaſe had abated. Of this epidemic, died two hundred and twenty, of whom eighty or ninety belonged to the ſociety of friends.

The population of Philadelphia at this time, is not exactly aſcertained; but as the city had been ſettled but ſeventeen years, the number of people could not have been great. If we conſider that the city was thinly inhabited, and that no conſiderable artificial cauſes of diſeaſe had been accumulated; together with the fact of the patient's vomiting and voiding blood, we muſt admit the diſeaſe to have been extremely virulent, beyond any thing that has marked its returns in ſubſequent periods.

In the ſame letters, Mr. Norris, October 18th, mentions that he had information from Charleſton of the great mortality by the ſame fever—150 had died in a few days, and the ſurvivors moſtly fled into the country.

In a hiſtory of South-Carolina, lately publiſhed, there is a more particular account of the calamities that befel Charleſton in this year 1699. A moſt dreadful tempeſt, a common event after exceſſive heat, threatened a total deſtruction of the town. The ſea ſwelled and ruſhed violently into the town, compelling the people to fly to the tops of their houſes for ſafety. A fire broke out and laid moſt of the town in aſhes. The ſmall-pox proved fatal to many of the youth, and to fill the cup of calamity, the bilious plague broke out with ſuch irreſiſtible mortality, that the principal officers of government, one half of the members of aſſembly and multitudes of the citizens fell victims. Theſe calamities came near to diſſolve the ſettlement.

Hiſt. of S. Carolina, vol. 1. 141.

I find no ſuggeſtion that any veſſels had arrived from the Weſt-Indies at theſe places, or that any ſuſpicion exiſted of the importation of this terrible diſeaſe. At that time, there was very little intercourſe directly between Philadelphia or Charleſton and the Weſt-Indies.

But it will be remarked, that the diſeaſe firſt appeared about the " beginning of Auguſt," as in modern times—that it once abated, as it did in New-York, both in 1795 and 6, ſo as to be extinguiſhed in the latter year, and that for two or three weeks.—That in 1699 as in later returns of it, it yielded not to cool weather, until late in October. It will be further remarked, that a ſevere epidemic catarrh preceded this plague, about eighteen months, as it did in 1789-90.

During this period, other parts of the earth did not eſcape affliction. A comet appeared in 1698 and another ſmall one in 1699; and in this latter year, Lima ſuffered conſiderable damage by an earthquake, as did ſome parts of Batavia in the Eaſt-Indies.

In October 1698 began a fatal ſpotted fever to prevail over all England. In the ſpring of 1699 a ſevere and fatal catarrh was epidemic, which carried off the young and robuſt, together with hard drinkers. A cough was epidemic among horſes in England and France. In this period the catarrh in America preceded that in Europe, one whole year.

The ſeven laſt years of this century, the period under conſideration, were diſtinguiſhed for a ſevere and continued famin in Scotland. The general cauſe was, the wet and cold ſummers which prevented crops from arriving to maturity. Vaſt multitudes periſhed with hunger—the dead bodies lay ſcattered along the highways. See Sinclair's Statiſtical account of Scotland in a great number of paſſages, and eſpecially vol. 6. 132, 189. It does not appear that, during this long period of diſtreſs and want, any peſtilence prevailed in Scotland.

At the ſame time, famin afflicted Finland and carried off one tenth of the inhabitants, and a greater proportion in the leſs fertile provinces of Sweden.

Williams's Obſ. on North Governments, vol. 1. 638.

The ſame period was remarkable for failure of crops in America. In a ſermon preached in Boſton on Lecture Day, Sept. 27, 1698, we have the following account of this ſubject. " The harveſt hath once and again grievouſly failed, in theſe years, and we have been ſtruck through with terrible famin.—The very courſe of nature hath been altered among us; a lamentable cry for *bread, bread,* hath been heard in our ſtreets."

Magnalia b. 7. 113.

In the preceding page, of this ſermon, it is alſo remarked, that " Epidemical ſickneſſes have, in theſe years, been once and again upon us," and it is mentioned that Boſton loſt, in one year, ſix or ſeven hundred of its people, by one contagious diſeaſe. The year is not ſpecified.

It will be obſerved that in the hiſtory of the laſt two centuries few inſtances of the plague in Egypt and the Levant are mentioned. The reaſon is, that I have no regular ſeries of accounts of plague in Egypt or Conſtantinople, for the laſt two or three hundred years. One remark however I will hazard, on the ſtrength of facts within the preſent century, that whenever malignant epidemics prevail generally in Europe or America, the plague rages in Egypt and Conſtantinople, or rather a little before; the commencement of the peſtilential ſtate of air in thoſe unhealthy cities being a little anterior to its principal effects in the north of Europe.

At the time of the dreadful bilious plague in Philadelphia and Charleſton juſt before deſcribed, the plague was raging in the Levant, and for a year or two after.

During this period, in 1700, the ſame peſtilential conſtitution diſplayed itſelf in a moſt deſtructive ſore throat in the iſland of Milo, in the Levant. It is thus deſcribed by Tourneſort, vol. 1. let. 4. He ſays it appeared in a "Carbuncle or plague-ſore in the bottom of the throat, attended with a violent fever." It carried off children in two days, but ſpared adults. He calls it the "child's plague." There appears to be ſome propriety in giving the diſeaſe this appellation. It has ſome reſemblance to the true peſtis, the ulcer being formed in the throat inſtead of the glands. The inſidiouſneſs of the diſtemper is another circumſtance of reſemblance—perſons in both diſeaſes often walking about, a few hours before they expire. But this is a moſt prominent fact, that the ulcerous ſore throat, or malignant anginas are rarely or never epidemic, except in periods when the plague and yellow fever prevail in places where they uſually appear. In no inſtance has the ſore throat been epidemic in America, except when the plague has been raging in Egypt and Conſtantinople. At leaſt I can find no exception to this remark; and what is more, the virulence of the one diſeaſe in one country, correſponds with the malignity of the other diſeaſe in the other countries. Thus, as the plague in Egypt in 1736, was far more deſtructive than the ſame diſeaſe, at other times, ſo was the angina maligna of that period in America.

When obſervation and philoſophy ſhall prevail over the prejudices of men in regard to the origin of theſe diſeaſes from infection, it will be found that the angina, in its various forms, is only a particular ſtage or modification of the peſtilence, which ſpreads over the world at certain unequal periods. The milder forms of the peſtilence appear in catarrh, meaſles and chin cough; which uſually appear together, or nearly ſo, at the beginning of the more virulent general contagion; the later and more fatal ſtages are marked by anginas, cynanche maligna, petechial fever, bilious and glandular plague in ſummer; and peſtilential pleuriſies in winter.

There are certain times, when the conſtitutions of men in all parts of the world, contract a poiſon, which nature makes an effort to expel; and the different epidemics that accompany or follow each other, in rapid ſucceſſion, appear to be the different modes by which nature ſtrives to rid the human body of the virus. Theſe modes depend on the ſeaſon of the year, the conſtitution or age of the patient and a multitude of ſubordinate circumſtances.—Whether this poiſon is a poſitive ſubſtance inhaled by the lungs and pores, or is the effect of mere debility, which unfits the ſeveral parts of the body to perform their functions, is a queſtion of a curious nature.

It is remarkable that in this year 1700, when this ulcerous ſore throat was raging in the Levant Iſles, ſmall children in the north of Europe were ſeized with a ſuffocating catarrh or catarrhous fevers. Theſe were followed by mild epidemic meaſles.

Short vol. 1. 418.

In the ſame year the ſmall-pox was confluent and malignant. The winter of 1700 was very mild.

In this year fell a meteor in Jamaica, which entered the earth, making conſiderable holes, ſcorching the graſs, and leaving a ſmell of ſulphur.

Bad. Mem. 6. 389.

SECTION VII.

Hiſtorical view of peſtilential epidemics from the year 1701 *to* 1788.

THE year 1701 appears to have been exceſſively dry in America. Dr. Ruſh relates that during the dry ſummer of 1782, a rock in the Skuylkill appeared above the ſurface of the water, on which were engraven the figures 1701. How little do men ſuſpect the value of this inſcription! To this alone I am indebted for the fact of extreme drouth in that year—and the fact is among the proofs of an extraordinary evaporation, before diſcharges of fire and lava from volcanoes. In 1701 was an eruption of Veſuvius; in 1702 of Etna. It will hereafter appear that a ſimilar dry ſeaſon in 1782 preceded the great eruption of Heckla in 1783. Indeed it is a general fact, and as far as I can learn, ſuch ſeaſons ſeldom occur, except during the approach of comets, or antecedent to volcanic eruptions.

This was a peſtilential period. In 1701 Toulon loſt two thirds of its inhabitants by the plague, and the Levant was ſeverely affected about the ſame time. See the bills of mortality for Augſburg, Dreſden and Boſton.

In 1702 appeared a comet; Etna diſcharged its fires, and in Boſton raged a malignant ſmall-pox, attended, in many caſes, with a ſcarlet eruption, which was miſtaken for the ſcarlet fever. It appears from Fairfield's diary that this diſeaſe appeared in June and was at firſt mild, not fatal to any of the patients. In Auguſt died one patient—in September it became very mortal, and in this month was attended with a "ſort of fever called ſcarlet fever." In October, many died of the "fever and the ſmall-pox, and it was a time of ſore diſtreſs," on which account the general court ſat at Cambridge. In December "the fever abated;" but the ſmall-pox continued to be mortal, till the month of February 1703, when it began to ſubſide.

I have already remarked that eruptive diſeaſes ſeem to belong to one family. Phyſicians will obſerve the alliance in their ſymptoms; but I would obſerve that the progreſſiveneſs in this diſeaſe of 1702 and the variations in its ſymptoms, prove it to have been an epidemic, and not the effect of mere infection, or ſpecific contagion.

In this year alſo the drouth was extreme. In New-York raged the American plague, which was ſaid to have been imported from St. Thomas's. By the accounts, this was more fatal than any diſeaſe ſince that period. It was called the "Great Sickneſs" and hardly a patient ſurvived. On account of it, the aſſembly was held at Jamaica on Long-Iſland.

Smith's Hiſt. N. York, p. 104. Journals of Aſſembly, vol. I. 151.

Such were the epidemics in America which followed the influenza of 1698—malignant pleuriſies in 1698—plague in 1699 and in 1702, with virulent ſmall-pox—all of unuſual ſeverity. Let the reader compare theſe facts with the accounts from Europe and the bills of mortality.

The winter of 1702-3 was variable—ſevere froſt and great ſnows, with intervals of warm weather. In ſpring catarrh prevailed in England, followed by a ſickly ſummer, with earthquakes.

In January and February 1703 were ſevere ſhocks of earthquake in Rome, Naples and other parts of Italy. In October a memorable tempeſt or hurricane, which did great damage at ſea, and injured buildings on land.

In 1704 the ſummer was very dry, and a moſt malignant ſpotted fever raged in Augſburg and in Pruſſia. Flies were in great abundance, and there was an eruption of Veſuvius. The laſt eruption of the volcano in Teneriffe was in this year, ſince which it has diſcharged ſmoke, but no fire.

Note. A late arrival from Teneriffe brings an account of the burſting forth of a volcano, in June laſt, which continued, till the veſſel left the iſland in Auguſt.

In December 1705 were many moſt violent tempeſts and inundations. The tide roſe in the Loir in France 25 feet beyond its uſual height. Half of Limerick in Ireland was laid under water. Theſe ſtorms indicated the approach of a comet, which appeared in the following year.

In 1706 coughs and coryzas prevailed, and dyſentery fatal among children.

A ſmall ſhock of earthquake was felt in America in 1705.

In 1707 appeared another comet and ſubterranean fire was uncommonly agitated. Veſuvius diſcharged fire, and a new iſland was thrown up in the Archipelago, with an earthquake and volcano. The ſeaſons in this and the following year were variable.

Buffon's Nat. Hiſt.

In November 1708 began a moſt ſevere and univerſal catarrh in Europe, which was ſpeedily followed by a ſeries of peſtilential diſeaſes. Of this catarrh, of the ſeaſons, and the plagues that followed we have from Europe very correct accounts; but, with the utmoſt induſtry, I cannot learn whether the catarrh extended to America.

The exploſion of ſubterranean fire in various places in 1707 ſeems to have been the commencement of this period; altho there was a plague in the eaſtern parts of Europe, moſt of the preceding years from 1700. A meteor paſſed over England, near the mouth of the Thames, July 31, 1708, a few months before the catarrh.

The winter of 1708-9 was the ſevereſt that had happened, after 1683-4. But it appears that the catarrh commenced two months before the ſevere cold began. At leaſt this epidemic appeared in the north of Europe, as early as November; whereas the autumn was one of the mildeſt, till January, that was ever known. Then the weather changed ſuddenly to moſt ſevere cold and continued for a number of weeks.

Short, vol. 1. Lanciſius, p. 194 and ſeq.

This catarrh is carefully deſcribed by Lanciſius as it appeared in Italy. In Rome it commenced in January, but increaſed afterwards, as the cold abated. It began with coryza, rheumata and ſlight cough, and was attended with pains in the breaſt, angina, pleuriſies and peripneumonies, which prevailed greatly in the ſpring, among thoſe who neglected the cough, or uſed a full diet.

Symptoms of this catarrh were, laſſitude, fever with chills, wandering pains in the breaſt, continued cough, hard pulſe, flame-colored or turbid urine, ſpitting of blood and difficult reſpiration. The cheeks were red and the body ſuffuſed with a yellow color, like that of the jaundice.

Perſons ſhut up in priſon, eſcaped the diſeaſe.* Fewer women than men were afflicted, and perſons in eaſy circumſtances, who could take care of themſelves, ſuffered leſs than the poor. Many recovered by means of ſweats or hemorrhagy at the noſe, or diſcharges from the bowels, or copious diſcharges of urine, or by all theſe evacuations, accompanied by ſpitting a thick phlegm. Veneſection was beneficial, eſpecially in robuſt conſtitutions. On diſſection, the precordia appeared of a reddiſh color, extending to the diaphragm—and diſcolored by ſpots of blackiſh thick blood—polypuſſes were diſcovered in the great veſſels of the heart.

This diſeaſe did not entirely diſappear till June.

In the ſummer of 1708 preceding the ſevere winter and catarrh, gnats appeared in prodigious ſwarms.

The winter of 1708-9 killed fruit-trees, vines and corn. After this exceſſive cold, multitudes of people died of apoplexies, and others were ſeized with vertigoes, arthritics, pleuriſies, inflammatory fevers of all kinds, and conſumptions. This ſeverity of cold extended over America as well as Europe, in the ſame winter.

A peſtilence raged in the north of Europe from the years 1702 to 1711, of which we have an account in Philoſophical Tranſactions, No. 337.

Baddam's Memoirs, vol. 6. p. 5.

It has been obſerved already that the plague raged in the Levant, in the firſt years of the preſent century. In 1702, the ſame year, it will be noted, in which the terrible ſmall-pox raged in Boſton and bilious plague in New-York, the plague broke out in Poland, near Pickzow, ſoon after an unfortunate battle between the Swedes and Saxons. No ſuggeſtion appears that the diſeaſe was caught by infection from a diſtant country, nor that the fetor of dead carcaſes was ſuppoſed to generate the diſtemper. On theſe important points we are left in the dark. All that is recorded is, that it *firſt began* near Pickzow in Poland, ſoon after a battle. It ſpread in 1703, 4 and 5 over Poland, and into parts of Hungary and Ruſſia, ſweeping away vaſt numbers of inhabitants. In 1706 we hear nothing of it. In 1707 it broke out in Warſaw, with great mortality. In 1708 it appeared in Thorn, and parts of Poliſh Pruſſia.

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* This has been obſerved in one or two inſtances in America, and has been alledged as an evidence, that the influenza is an infectious diſeaſe, and that perſons ſequeſtered from contagion, may eſcape it. To my mind the fact is rather an evidence that the eſcape of priſoners is owing to a different, perhaps a leſs ſtimulant condition of the air they breathe. It is hardly poſſible they ſhould eſcape expoſure to infection, when every one around them is affected. The contagion of the diſeaſe however is not denied.

This approach of the diſeaſe alarmed the people of Dantzick —public prayers were ordered in the churches—all commerce and communication with infected places were forbid—no merchandize from infected or ſuſpected places was permitted to enter the city, and the magiſtrates neglected no meaſure that could guard the public ſafety. All travellers and ſtrangers were ſtrictly examined, and none permitted to enter without ſufficient proofs that they came from healthy and uninfected places. Theſe and other ſtrict regulations were enjoined in July 1708; but notwithſtanding theſe precautions, " the diſtemper gradually inſinuated itſelf, for in March 1709, there died out of one diſtrict in the old town ſeven perſons, and another perſon, being ill, was ſent to the hoſpital, where the diſeaſe ſoon ſpread." Dr. Gottwald, the author of this account, viſited the hoſpital on the 16th of the ſame month, and found many perſons ill—" ſome had buboes, others carbuncles, others gangrenous ulcers, which he could not determin to be peſtilential, but which he judged to be ſymptoms, if not of the plague already commenced, at *leaſt of ſomething, but little inferior to it, and certain forerunners of that deſtructive diſtemper.*"

In the preceding account, we obſerve the utter inſufficiency of laws and regulations to prevent the introduction of the plague into cities; and the uncertainty of phyſicians at firſt as to the nature of the diſeaſe. The facts ſtated prove the diſeaſe to have been generated on the ſpot, and to have been *progreſſive* from malignant fevers to the real plague. I have no bills of the mortality in Dantzick for the preceding years, but if any ſuch are on record, it will appear, that the approach of the plague was indicated in that city by malignant diſeaſes and increaſed mortality, for ſome months or perhaps a year or two preceding.

The diſeaſe ſpread ſlowly at firſt, but in July and Auguſt became general—it was at its height in September, and gradually declined till the cloſe of the year. The number of victims was nearly 25,000.

From the very accurate hiſtory of this peſtilence by Dr. Gottwald, the following circumſtances are to be collected.

1ſt. That the diſtemper firſt made its appearance in a part of the old town, called Raumbaum. What its ſituation is, may be ſeen in Buſching; a part of the city built on a ſtream which falls into the Viſtula—low of courſe—a place of buſineſs, and its ſtreets dirty.

2d. The diſeaſe, after its firſt appearance, lay lurking for a long time, in the ſuburbs of the city, and its progreſs was not perceivable, for two or three months. This correſponds with its phenomena in London and other places; and proves that cold or favorable weather ſuſpends or checks the action of the peſtilential principle.

3d. It was moſt fatal to the poor—people in good condition moſtly eſcaped. The ſame was obſerved at Copenhagen in 1711.

4th. Its decreaſe was gradual, as well as its increaſe.

5th. Many of the inhabitants, tho they took never ſo much care to avoid the diſtemper, kept at home, ſuffered no infected perſon to approach them, and uſed all manner of preſervatives, " yet caught the infection."

6th. The diſeaſe was preceded, in 1708, by extraordinary numbers of ſpiders. The ſame preſage has been obſerved on other occaſions.

7th. While this diſtemper was raging, on the 11th of Auguſt, an offenſive miſt was obſerved, like a thick cloud, but of ſhort duration. It returned in the afternoon, from the northweſt, ſo thick as to darken the air. Its color was that of the effluvia from the efferveſcence of the oil of vitriol with oil of tartar, a blackiſh yellow.

8th. In the beginning of October appeared over the city a blue fiery globe or meteor, which came from the north weſt, in the night, ſhot towards the town rapidly, illuminating the city, and fell to the ſouth.

9th. Crows, ſparrows and other birds did not make their appearance during the peſtilence.

In 1708 and 9 the plague deſolated Livonia. In 1710 the diſeaſe appeared in Sweden; 30,000 perſons periſhed by it in Stockholm, and other parts of the kingdom did not eſcape. Hiſtorians relate, that in the latter part of the laſt century and beginning of the preſent, the ſweating ſickneſs and great plague in Sweden deſtroyed ſeveral hundred thouſand lives, in conſequence of which Sweden is leſs populous than formerly.

Williams's Obſ. vol. 1. p 638.
Univerſal Hiſt. vol. 35. 458.

In 1710 alſo the territory of Lithuania was ravaged by peſtilence.

In 1711 Copenhagen loſt 25,000 citizens by the ſame malady.

It is proper to remark how extenſively peſtilence prevailed after the great catarrh and terribly ſevere winter of 1709.

Nor did America eſcape the operation of the general principle. A body of troops under Gen. Nicholſon, deſtined to cooperate with a fleet from England, in the reduction of Canada, encamped near Wood Creek in the province of New-York, and in July and Auguſt were attacked with a diſtemper which made dreadful havoc and obliged them to decamp. Some of the men died as if they had been poiſoned. This circumſtance gave riſe to a report which Charlevoix gravely relates, that the Indians had poiſoned the water of the creek, by throwing into it all the ſkins of beaſts they had taken in hunting. The diſeaſe was probably the lake fever or a malignant dyſentery. This happened in 1709.

Hutch. Hiſt. Maſſ. vol. 2. 179.

England alſo felt the influence of the ſame general principle, as appears from the bill of mortality for 1710. In France, England and the Low Countries raged a catarrhous fever to which was given the name of Dunkirk rant. In ſome places prevailed a ſpotted fever, as at Norwich.

Short on Air. Baddam's Mem. vol. 6. 70, 72.

In 1712 prevailed catarrh in Europe, with ſore throats. Whether catarrh prevailed in America alſo, I can obtain no information. The ſeaſons in England were exceſſively wet, and corn was rotten or mildewed. The winter was ſevere, there was an eruption of Veſuvius and an earthquake. From theſe circumſtances, I ſuſpect the approach of a comet, but have found no account of any.*

Short, vol. 2. 8.

In October 1712 commenced a mortal ſickneſs in the town of Waterbury, in Connecticut, which raged for eleven months. It was ſo general that nurſes could ſcarcely be found to tend the ſick. What the diſeaſe was, I am not informed; but not improbably it was that ſpecies of putrid pleuriſy, which has ſo often made dreadful havoc in America.

Trumbull's Hiſt. of Connecticut, 386.

In the ſame year, prevailed a ſore throat in London, accompanied with dizzineſs and pain in the limbs.

In 1713 prevailed the meaſles in America, cotemporary with epidemic peſtilence in Europe.

In 1712 and 13, the plague was epidemic in Vienna, Hungary, Stiria and other eaſtern countries. This diſeaſe was preceded by the ſpotted fever, which gradually changed to plague. At the ſame time, whole countries were overrun with inſects.

Short, vol. 2. 10.

In England prevailed a fever which Mead has pronounced to have been of the ſame kind, as the ſweating ſickneſs in the ſixteenth century.—He ſays it was imported from Dunkirk, but how it came to be in Dunkirk, he does not inform us.

During theſe calamities among men, the beaſts of the field did not eſcape. A fatal diſtemper among cattle broke out in 1711 and raged with ſuch violence, in Italy, as almoſt to deſtroy the ſpecies. It ſpread for three or four years, and horſes periſhed by a ſimilar peſtilence. The writers who deſcribe the diſeaſe, repreſent it as a kind of plague; and all agree that it ſprung from a ſingle infected cow from Dalmatia. How this cow became infected, they do not inform us. The truth is the diſeaſe was an epidemic, tho very infectious; and that it did not neceſſarily originate in infection, is proved by its appearing in many other parts of Europe.

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* Since the text was prepared for the preſs, I have found an account of a comet in 1712. My ſuſpicions therefore were well founded.

The diſeaſe began with rigors, which were followed by violent fever, with eruptions like thoſe of the ſmall-pox, and terminated in five, ſix or ſeven days.

Baddam's Mem. vol. 6. 72. Lanciſius p. 154.

In 1714 began in Europe a ſeries of dry ſummers. This year was rather ſickly in England, and cattle alſo periſhed by an infectious diſtemper.

In 1715 the ſmall-pox and meaſles were epidemic in England. In the ſame year, Plymouth in Maſſachuſetts loſt 40 of its inhabitants by a malignant diſeaſe, but no particulars are known.

Hiſt. Col. vol. 4. 129.

In 1716 the winter was exceſſively ſevere, and a fair was held on the Thames. The rivers in Europe, even in Italy, were covered with ice.

Short, vol. 2. 17.

In America, the 21ſt of October O. S. was ſo dark that people uſed lighted candles. Lima, the ſame year, was ſhaken by an earthquake.

Mem. Am. Acad. vol. 1. 244. Ulloa. Lima.

In 1717 appeared a comet, and there was an exploſion of Veſuvius. Holland and Germany ſuffered ſeverely the ſame year by inundations. In America the winter was terribly ſevere, and remarkable for "prodigious ſtorms of ſnow," ſays Mr. Winthrop of New-London in a letter to Dr. Mather, Hiſt. Col. vol. 2. 12. One hundred ſheep belonging to that gentleman were buried in the ſnow on Fiſher's Iſland, and 28 days after, were dug out, when two of them were found alive; and they both lived and thrived. The ſnow was accumulated over them to the height of ſixteen feet.—This ſnow ſtorm is diſtinguiſhed in the Annals of America, as by far the greateſt ever known.

This year was remarkable alſo in America for the death of many old people, ſays

Hutchinſon's Hiſt. vol. 2. 223.

In Europe catarrh was prevalent, and malignant ſmall-pox among children. At Underwald in Switzerland prevailed a tertain, ſo violent as to deſtroy life at the ſecond attack. The plague made its appearance in ſome part of the Turkiſh dominions.

See Short, vol. 2. 20, and Lady Montague's Letters.

In 1718 the winter was cold in Europe, the ſeaſon in England hot, and a comet was ſeen. The plague advanced.

See Short, vol. 2. and Ruſſel's Hiſt. Aleppo.

In 1719 malignant fevers were prevalent in many parts of Europe, marking a peſtilential principle of great extent. The winter of 1719-20 in America was very cold.

Douglas.

In theſe laſt years raged malignant pleuriſy in Hartford, in Connecticut, with great mortality.

In March 1719 an immenſe meteor paſſed the heavens, illuminating the earth and burſting with a tremendous report. Its diameter was calculated by Dr. Halley at a mile and a half.

At this time the plague appeared in Aleppo, and carried off by report 80,000 people. Ruſſel agrees that this diſeaſe came from the north, altho he has given us few particulars. It raged, as uſual, for two or three years.

Hiſt. of Aleppo—paſſim.

In 1718, 19, 20 and 21, ſays Dr. Rogers, the greater number of thoſe who lived near the ſlaughter-houſes at Cork, died.

In 1720 happened the laſt great plague in Marſeilles, on which occaſion has been publiſhed "Traité de la peſte," a treatiſe in quarto, by Chicoyneau, under the ſanction of the French king, in which great efforts are made to prove the diſeaſe to have been imported from the Levant.

The proofs of importation ſtand thus. "Capt. Chataud left Said in Syria in January 1720, with a clean patent. The plague was not then in Said, tho it broke out ſoon after. On the paſſage, ſeveral perſons died, and the phyſicians at Leghorn, where the ſhip ſtopped, pronounced their diſeaſe to be "a malignant peſtilential fever."

The ſhip arrived at Marſeilles, and ſome perſons who had concern with the goods, died in May. The ſuſpected goods were ſubjected to fifteen days retreat and purification—they were forbid to be introduced into the city—the porters were ſhut up; but all regulations were fruitleſs. In June, deaths appeared in the city with diſtinctive marks of the plague."

On ſuch flimſey evidence do the ſticklers for the ſole propagation of the plague by infection, ground all their aſſertions reſpecting the diſeaſe at Marſeilles!

But it happens in this caſe, as in moſt ſimilar inſtances, that the pretended proofs of infection carry refutation in the very face of them.

In the firſt place, it is an acknowledged fact, that at the time the ſhip left Said, the plague had not appeared in that port, or town. It was at Aleppo and in other places far diſtant in 1719, but had not broke out in Said. How, in the name of reaſon, could men or goods be infected, when the diſeaſe did not exiſt in the place?

To overcome or rather to evade the force of this objection, the writers on the ſubject are compelled to reſort to *ſuppoſition*. They ſay it is *poſſible*, the plague might have been in the place, tho not known or generally admitted. And here reſts their whole argument!

It is true, that ſome of the ſeamen or paſſengers died on the paſſage, with a malignant peſtilential fever. But in this caſe, the malady originated on board the ſhip—and the infection is not traced to the Levant ports. There is an end of the chain—the diſeaſe began *without infection*, on board the ſhip, as malignant fevers have done in thouſands of other ſhips.

Again, it is admitted by Dr. Mead himſelf, p. 255, that from the time of the ſailors' death, after the ſhip arrived, it was full ſix weeks before the diſeaſe was known in the city of Marſeilles; a circumſtance that renders it nearly impoſſible that there could have been any propagation of the diſtemper by infection. To remove this objection, the advocates of infection again reſort *to ſuppoſition*. They *ſuppoſe* it poſſible ſome latent ſeeds of the diſeaſe had been concealed in goods, or clothes—and ſuch ridiculous ſuggeſtions are made the grounds of aſſertion.

But what completely refutes all theſe idle ſuppoſitions, is, that we have full evidence, that the plague in Marſeilles was generated in the city, and gradually aroſe from milder diſeaſes. In the beginning of the "Traitè de la peſte," it is ſtated from Mon. Didier and not denied, that "the preceding year 1719 was a barren year—the corn, the wine and the oil, were defective. The heat of ſpring was exceſſive and followed by great rains, with weſterly winds—the fruits were bad. In this year a peſtilential fever appeared in Marſeilles, of which many died, and *in ſome, appeared buboes, carbuncles and paroitides.*"

Here we obſerve facts that always exiſt, before the plague, and which demonſtrate the uniform operations of the laws of nature. The year 1718 began to exhibit malignant diſeaſes in greater numbers than uſual. In 1719 the plague broke out at Aleppo, and in the north and weſt of Europe, malignant fevers became in many places, epidemic and peſtilential. In 1720, the peſtilential ſtate of the air, arrived at its criſis in Marſeilles. The peſtilence in Europe exhibited a *regular progreſs*, from ordinary typhus fever to the plague. A fatal ſmall-pox and ſpotted fever prevailed in Piemont.

To demonſtrate this fact, the reader will only turn to the bills of mortality in London, Amſterdam, Vienna, Dreſden, &c. for the years under conſideration, and obſerve every where the effects of a general unhealthy ſtate of air, in the increaſe of the number of deaths.—The bills of mortality in Boſton and Philadelphia alſo prove this ſtate of air to have extended to this country; and the malignancy of it ſeems to have abated in America after 1721, in which year the ſmall-pox was very mortal in Boſton.

The accounts of diſeaſes in America, at this period, are few and imperfect. Tradition has preſerved the memory of deſolating ſickneſs, at various times and in various places, ſome of which, I ſuſpect, refer to this period, but I am not able to aſcertain the dates, with any certainty.* By accident however,

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* My father mentions an inſtance, which he believes to have been not long before his birth, which was in 1722. An aged lady of 96, who was born in 1702, informs me that a malignant pleuriſy raged when ſhe was 17 years old; this fixes the period in 1719.

I am able to determin poſitively the peſtilential ſtate of air in America in 1720. A genuine letter is extant, from Thomas Hacket of Duck Creek, now in the ſtate of Delaware, dated April 10th 1720, in which he ſtates that a mortality prevailed in that place, which exceeded that in London in 1665, and almoſt depopulated the village. I have ſeen the letter in poſſeſſion of Dr. Ruſh.

In 1721 there was an eruption of a volcano in Iceland. A dreadful dyſentery raged in Upper Saxony.

In 1720 there was a great earthquake in China, and in 1721 ſhocks were felt in the Mediterranean, by Dr. Shaw who was then on his travels to the eaſt.—In October 1720, fire aroſe out of the ſea near Tercera, one of the Azores, and a ſmall iſland aroſe.

Buffon's Nat. Hiſt.

In 1722, the ſeaſons were cold, wet and rainy. In Auguſt happened a moſt violent ſtorm in Jamaica and S. Carolina. In May an earthquake in Chili.

The winter of 1722-3 was cold and dry in England. In 1723 appeared a comet, and on the 24th of February, O. S. a mighty tempeſt which is recorded among the memorabilia of America. The wind blew violently from the ſouthward, then veered ſuddenly to the eaſtward and northward, bringing in a tide which roſe two or three feet above the Long Wharf in Boſton, and flowed over all the lower part of the town, filling cellars and deſtroying property to a great amount. Immenſe damage was ſuſtained in all the maritime towns.

See Mather's letter. Hiſt. Col. vol. 2. 11.

The confluent ſmall-pox raged in England. See the London bill of mortality for 1723. Dyſenteries, pleuriſies and other inflammatory complaints prevailed in the different ſeaſons.

The bilious plague prevailed in Barbadoes, ſaid to be imported from Martinico. We are not informed from whence it came into Martinico. In theſe accounts of infections, we are not led to the end of the chain.

In the ſame year 1723 prevailed in many parts of the colony of Rhode-Iſland, a fatal diſeaſe called the "burning ague." It was particularly fatal, near Providence, between Pautucket and Pautuxet. In proportion to its patients, no diſeaſe in America, was ever more mortal. It did not prevail in a large town, but in villages, and perhaps the clearing of ſome neighboring ſwamps might have been one cauſe of the diſeaſe. The year however was leſs healthy than uſual. A diſeaſe of the ſame name is noted once or twice in ancient hiſtory. See the year 1001.

The year 1724 in England was moſtly wet and cold; the whooping cough prevailed; but the year was generally healthy.

The ſummer of 1725 was alſo wet and cold in England. In January a ſevere froſt produced many inflammatory complaints. In this year happened violent earthquakes in South-America, and eruptions from two volcanic mountains in Iceland. I have no account of the weather and diſeaſes in America. I only learn from an old gentleman, that one of the winters between 1722 and 1725 was called, "the hard winter."

The winter of 1726-7 was changeable in England, but moſtly cold with great ſnows. Remitting fevers prevailed in ſummer and inflammatory, in winter, which ſwelled the bills of mortality to an unuſual degree. At the ſame time the plague raged in Egypt.

The ſame winter in America was milder than uſual—the ſummer of 1727 was very hot and dry. See Dudley's account of the great earthquake.

Philoſ. Tranſ. and Muſeum, vol. 5. 363.

In 1727 appeared a comet—an exploſion of fire took place from Veſuvius and a volcano in Iceland. The interior counties of England were ſhaken by an earthquake; and on the 29th of October of the ſame year happened one of the moſt extenſive and violent earthquakes ever known in America. A malignant dyſentery was epidemic in Bern. In America, the ſummer was very hot.

Short, vol. 2. Van Troil on Iceland. Williams on Earthquakes.
Memoirs of American Academy. Pennant's Arctic Zoology.
Zimmerman on dyſentery. Phil. Tranſ. 437.
Baddam's Mem. vol. 10. 110.

This was a ſickly year; ſee the bills of mortality for London and Amſterdam, Boſton, Philadelphia Chriſt's Church and Dublin. The prevalent diſeaſes in London were fevers of a malignant type. What the diſeaſe was in Philadelphia, I know not; but the greateſt mortality was in February, March and April.

In 1728 putrid fevers were frequent—the ſummer was cold in England and the following winter ſevere. The year 1727 was unproductive ; corn in England was ſcarce and the ſcarcity continued into this year. An eruption of a volcano in Iceland and the plague in Egypt marked this year, 1728. The eruption in Iceland continued till 1730.

This year, 1728, the ſummer weather in South-Carolina was unuſually hot and dry. The earth was parched and the ſprings exhauſted. In Auguſt a violent hurricane occaſioned an inundation, which ſpread over the low grounds and did incredible damage to the wharves, houſes and corn fields. The ſtreets of Charleſtown were covered with boats; the inhabitants were driven to the upper ſtories of their houſes; twenty-three ſhips were driven aſhore and thouſands of trees were levelled. The ſame ſeaſon, the bilious plague raged in Charleſton with great mortality.

Hiſt. of S. Carolina, vol. 1. 316.

In 1729 appeared a comet, and in autumn a univerſal catarrh in Europe, and perhaps over the globe. This was preceded by meaſles. It ſeized with a ſlight chill, a ſlow fever, wearineſs, continual hoarſeneſs, pain of the head, and difficulty of breathing. The ſuddenneſs of the attack was aſtoniſhing, and it proved fatal to many aged and phlegmatic people. Many pleuriſies and peripneumonies followed. Its firſt appearance was in Poland, Auſtria and Sileſia, and it marched over Europe in five months. At the cloſe of this epidemic in 1730, Veſuvius diſcharged its contents of fire.

In this year 1729 the plague was in Aleppo, and it will be ſeen that the bills of mortality in the north of Europe exhibit a ſickly ſtate, through a period of many years at this time. The meaſles prevailed in America, and in Farmington, Connecticut, a malignant pleuriſy.

The ſummer of 1729 was in moſt parts of England, very wet, in other parts, dry ; but this made no difference in the prevalence of the catarrh. The ſmall-pox was very frequent in England.

This year alſo is remarkable for the firſt appearance of the yellow fever or black vomit at Carthagena, in South-America, where it made dreadful havoc among the crews of the fleet under Don Domingo Juſtiniani. The ſame fate attended the crews of the galleons under Lopez Pintado in 1730.

Ulloa, vol. 1. p. 44.—Lond. 1772.

The winter of 1729-30 was very mild in Europe. There was a ſmall eruption of Veſuvius in 1730 and in Iceland, and an earthquake in South-America, on the 8th of July totally demoliſhed the towns of Conception and Santiago, in Chili. This dreadful calamity was ſoon followed by an epidemic diſeaſe which ſwept away greater numbers than the earthquake.

Ulloa, vol. 2. 235, 257.

The plague was in Cyprus about this time, and was preceded by an earthquake.

In January 1729, the rivers and canals in Holland were covered with ice, from 12 to 20 inches thick. Meaſles and anginas prevailed, and in autumn the ſmall-pox made great havoc.

Bad. Mem. vol. 9. 314 and ſequel.

It will be obſerved that theſe eruptive diſeaſes in Holland were cotemporary with the meaſles in America, and the malignant pleuriſy in winter, which was the predominant ſymptom of a peſtilential conſtitution of air, in America, until the year 1761.

The winter of 1730-31 was very ſevere in Europe.

It appears from the bills of mortality in Boſton and Philadelphia, that the years 1730 and 31 were ſickly. What the malady was which ſwelled the mortality in Chriſt Church to double the uſual number in 1731, I am not informed; but the greateſt mortality happened in March and April. The ſmall-pox was the diſeaſe which augmented the bill in Boſton in 1730.

In 1731 the ſmall-pox ſpread in New-York, and occaſioned an adjournment of the legiſlature in September.

Journals, vol. 1. p. 633.

In 1732 appeared a comet, and in America the following winter was very ſevere, continuing from the middle of November to the end of March. In Europe, the winter was mild.

Douglas Sum. Short on Air.

Lima in South-America was ſhaken, this year, by an earthquake; a ſhock was experienced alſo in England; and in November the ſame was experienced in Canada and New-England. On the 9th of Auguſt happened a remarkably dark day.

See Douglas, and Profeſſor Williams Mem. Am. Acad.

In this year, the plague prevailed at Tripoli, Sidon and Damaſcus; and the American plague at Charleſton, S. Carolina.

Lining's letter. Edin. Eſſays, vol. 2.

Towards the cloſe of the year, in October, commenced in America a ſevere univerſal catarrh, which appeared in Europe alſo in December. It ſpread over all Europe, in the beginning of 1733, and probably over the earth, as it was experienced at the iſle of Bourbon, in the Indian Ocean.

Mem. of Dr. Hunt of Northampton, and the Medical publications in Edinburgh.

This epidemic ſeems to have been the precurſor of the moſt peſtilential period of this century. The ſummer of 1733, in England, was dry and pleaſant. The winter following was very mild. The plague raged at Aleppo.

The ſcarlatina appeared in Edinburgh; and the chin cough alſo began in England in 1734, continuing to prevail in 1735.

This period alſo was noted for meteors. In June 1734, a ball of fire paſſed through two oppoſite windows of a ſteeple at Air, in Scotland, broke one end of the bell-joiſt, and deſcended to the earth, without doing further harm. A boy in the neighborhood was killed by another ball of fire.

Sinclair's Stat. Ac. of Scotland, vol. 1. 96.

On the 2d of February 1735, Popayan in S. America, was nearly ruined by an earthquake.

The ſummer of 1735, was very wet and cold. In Europe in 1734 commenced a ſlow putrid fever. An anginous fever became epidemic among children, and quinſies or ſwellings of the throat, with contagion, and great mortality. Small-pox of a malignant kind prevailed at the cloſe of the year. The peſtilential ſtate of the air is ſaid to have affected birds, which died in the cages. Canine madneſs prevailed.

Short, vol. 2. Van Swieten, vol. 16. p. 56.

In 1735, prevailed a ſpotted fever of a fatal kind, and other malignant diſorders, with hydrophobia. In Scotland, the meaſles became epidemic, and fevers of a bad kind.

Eſſays and Obſ. Edin. Phil. Tranſac. vol. 4.
Huxham, vol. 1.

Earthquakes were felt in England in 1734 and 1736.

In 1736 and 7 a fatal ulcerous ſore throat and malignant peripneumonies, prevailed in France.

In 1735 or 6, three or four thouſand people, in the Orkney Iſlands, periſhed with famin. The ſcarcity there in 1782 and 3 was alſo deplorable, but none periſhed.

Sinclair's Scotland, vol. 7 497.

While theſe epidemics were prevailing in Europe, America felt the peſtilential ſtate of air. In May 1735, in a wet cold ſeaſon, appeared at Kingſton, an inland town in New-Hampſhire, ſituated in a low plain, a diſeaſe among children, commonly called the "throat diſtemper," of a moſt malignant kind, and by far the moſt fatal ever known in this country. Its ſymptoms generally were, a ſwelled throat, with white or aſh-colored ſpecks, an efflorеſcence on the ſkin, great debility of the whole ſyſtem, and a tendency to putridity.

It firſt ſeized a child, who died in three days. In about a week afterwards, three children, in another family, at a diſtance of four miles, were ſucceſſively ſeized and all died on the third day. It continued to ſpread, and of the firſt forty patients, not one recovered.

In Auguſt, it appeared at Exeter, a town ſix miles diſtant. In September, it broke out in Boſton, fifty miles diſtant; altho' it did not appear in Cheſter ſix miles weſt of Kingſton, till October.—It continued its ravages, through that year into the next, and gradually travelled ſouthward, almoſt ſtripping the country of children. Very few children eſcaped, for altho' the diſeaſe was very infectious, yet its propagation depended very little on that circumſtance. It attacked the young in the moſt ſequeſtered ſituations, and without a poſſible communication with the ſick. It was literally the *plague among children.* Many families loſt three and four children—many loſt all.

In ſome places, this diſtemper was more fatal than in others—

country towns ſuffered more than populous cities. And it ſhould be here remarked, that the virulence of this ſpecies of diſeaſe ſeems at times to be greatly augmented by cold and wet weather —it is moſt mild in cities where the air is, in a degree, corrected of its rigor and moiſture.—To this obſervation however there are exceptions.

Scorbutic people and thoſe who lived on pork, and of courſe the poor, ſuffered moſt. In ſome families, it was comparatively mild—in others it was malignant like a plague. This diſeaſe gradually travelled weſtward and was two years in reaching the river Hudſon, diſtant from Kingſton, where it firſt appeared, about 200 miles in a ſtrait line. It continued its progreſs weſtward, with ſome interruptions, until it ſpread over the colonies. Few adults were affected ; its principal ravages were among perſons under age, or rather under puberty. For many years after it was epidemic, it frequently broke out in different places without any apparent cauſe, but did not ſpread—a ſtriking proof that ſuch diſeaſes will not become *epidemic* by the ſole power of *infection*, but that ſome *general cauſe* muſt aid its propagation, or it will periſh in its cradle. This is probably true of every ſpecies of peſtilential diſeaſe.

From an elderly lady of great obſervation in New-Haven, I have learnt that perſons who, recovered of this diſtemper, were ſubject, all their lives, to ſore throat and quinſies, and what is perhaps more remarkable, that few or none of them have lived to be old. It is at leaſt apparent, in the ſphere of her obſervation, that thoſe perſons have died at an earlier age than others. Theſe facts are ſtriking proofs how much the whole ſyſtem, and eſpecially the ſeat of the diſeaſe, was impaired in ſtrength and firmneſs, by that diſtreſſing malady. A gentleman ſtill living, who was affected with the ſame diſeaſe in 1742, informs me that his conſtitution has never recovered from the ſhock it received from that malady.

The invaſion of this diſtemper was gradual, and for ſome time before its attack, children appeared to languiſh. It was not always attended with great proſtration of ſtrength, for perſons were often walking, an hour or two before their death. The ſame happened in the angina of 1794.

See further particulars in Colden's account. Medical Obſer. and Enq. London, vol. 1. 211, and in Belknap's Hiſtory New-Hampſhire, vol. 2. 118.

Diſeaſes among cattle in New-Hampſhire marked this period.

In 1736, and during the rage of the ulcerous ſore throat in America and in England, the plague made terrible havoc in Egypt—authors relate that Cairo loſt 10,000 perſons in a day.—In Nimeguen raged a malignant dyſentery.

In 1737 while the angina maligna was ſpreading over the northern parts of America, the bilious plague prevailed in Virginia. In England and Scotland, the meaſles broke out and prevailed in 1735 and 6, cotemporary with the angina in America. Dr. Short relates that the firſt perſon ſeized was a woman in her child-bed illneſs.

At the ſame time prevailed miliary fevers in Cornwall, accompanied with glandular ſwellings. Coughs, defluxions and catarrhs were frequent. A peſtilential diſeaſe in Devonſhire ſwept away cattle and ſwine.

In 1737 a very ſevere influenza invaded both hemiſpheres. It commenced in November.

In 1737 alſo appeared a comet; Conſtantinople was ſhaken and Smyrna half deſtroyed by an earthquake. A ſmall ſhock was felt in Boſton. In October of this year, a ſtorm or hurricane in the Eaſt-Indies, deſtroyed 20,000 veſſels of different ſizes, and 300,000 people. There was a great eruption of Veſuvius in the ſame year. In Iceland alſo was an eruption between 1730 and 1740, but the year is not ſpecified.

See Gent. Mag. and Tablet of Memory, art. Storms.

A moſt ſingular meteor in the ſame year, followed by a very ſevere winter.

This peſtilential conſtitution did not produce the ſame diſeaſes in England, as in France and America. The fatal ulcerous ſore throat was cotemporary in America and in France in 1737; but that diſeaſe did not appear, in its formidable array, in England until 1742. In 1734-5 appeared its ſiſter-malady, the ſcarlet fever in Edinburg; but it ſubſided; and the epidemic took the form of meaſles of a bad type, with hoarſeneſs, defluxions and catarrh. The catarrh prevailed alſo in Barbadoes in the cloſe of this year and beginning of the next, and in New-England was a great death of fiſh and water fowl.

In 1738 ſudden deaths, vertigoes and apoplexies followed the preceding epidemics in England. The plague raged at Ockzakow, at Barbadoes, and in New-Spain the peſtilence was ſo general and mortal, as to threaten the country with depopulation.

In 1739 the ſmall-pox prevailed in New-York, and ſome dyſenteries, but I hear of no remarkable occurrences in this year; except that angina maligna appeared in England in a few ſporadic caſes, but did not ſpread at that time; and an infectious fever prevailed at Charleſton.

Journals N. York Aſſembly, vol. 1. 756.
Fothergill's ac. Sore Throat.

A comet was ſeen in 1739, and the winter following in Europe was the ſevereſt known ſince 1716 or perhaps ſince 1709. The cold continued till June and was ſucceeded by a dry ſeaſon; then a wet, cold autumn. A dearth ſucceeded in Scotland, and meaſles ſpread over America.

In England ſpread the whooping cough in December 1740. The ſmall-pox prevailed and in 1741 that diſeaſe, with the ſpotted fever were very mortal.

See the London bills of mortality.

In Briſtol and Galway, in Ireland, the fevers fell little ſhort of the plague.

Huxham, vol. 2. Short, vol. 2.

It was computed that in 1740 and 41, Ireland loſt 80,000 people by famin, dyſentery and ſpotted fever.

Rogers on Epid.

Amſterdam experienced the ſame peſtilential conſtitution.

See the bills.

Not leſs remarkable were the ſeaſons in America. In 1740-41, a year later than in Europe, the winter was of the ſevereſt kind. Many cattle periſhed for want of food.

Journals of N. York Aſſembly, vol. 1. 799, 804.

During this winter meaſles prevailed in Connecticut. The American plague appeared in Philadelphia and Virginia. In Scotland many periſhed by famin.

Sinclair's Scot. vol. 6. 433.

Don Ulloa relates an opinion among the Spaniards in South-America, that in 1740, the black vomit was firſt introduced into Guayaquil by the galleons from the ſouth ſeas. They aver the diſeaſe not to have been known there, anterior to that year. It was moſt fatal to ſeamen and foreigners, but the natives did not eſcape. Here we have a new ſource of yellow fever!

In 1742 the ulcerous ſore throat of a malignant kind appeared in England, and continued to prevail more or leſs for many years, and in 1745 became very infectious.

See Short, vol. 2. and Fothergill's Works.

The ſummer of 1742 in England was dry.

In America, the ſame angina prevailed in 1742. From 1740 to 1744 peſtilential diſeaſes prevailed in all parts of the known world.

In Syria, the winter of 1741-2 was very ſevere. In March began an acute fever in Aleppo, attended with a ſevere pain in the right hypochondrium. The plague had previouſly ſhown itſelf on the ſea coaſt. In April, ſays Alex. Ruſſel, ſome reapers brought the infection into the neighbourhood of Aleppo. In the city, no notice was given of the plague, till the 18th of May; but on ſtrict enquiry, it was found that caſes had occurred before that time. Whether the "reapers" introduced the fomites into the city, the author does not inform us.

The diſtemper made no great havoc in this ſeaſon. It abated in July, and nothing is ſaid about *infection*, till November, when a few more caſes occurred. In February 1743 a few caſes appeared and in March an alarm was given. It was more general in this year, but diſappeared in 1744.

When the diſeaſe ſubſided in Aleppo, it was followed by diarrhæas and dyſenteries with petechiæ; and ſome obſtinate intermittents.

In December 1742 and January 1743 were earthquakes with great ſnows, violent rains and froſt.

In 1742 a mortal fever prevailed at Holliſton in Maſſachuſetts, in which died Mr. Stone, the miniſter and fourteen of his congregation. In this year was ſeen a comet.

In the ſpring of 1743; a ſmart ſhock of earthquake convulſed Sicily, Naples and Malta. A catarrh prevailed at the ſame time. Theſe were the precurſors of the dreadful plague which raged, in the following ſummer, at Calabria, Reggio, and eſpecially at Meſſina in Sicily, where periſhed 46,000 inhabitants out of 72,000. The ſummer was violently hot, and dyſentery prevailed in other parts of Italy.

At the ſame time, New-York was ſeverely afflicted by the bilious plague, where died, in one ſeaſon, 217 of the inhabitants —a conſiderable number for the population of that day.*

I know not what diſeaſes prevailed in Boſton, but the bill for that year ſhows it to have been ſickly.

The year 1743 was diſtinguiſhed for a tremendous eruption of fire at Cotopaxi, a mountain in the province of Quito, five leagues north of Latacunga; all the neighboring villages were ruined by floods from the melted ſnows of the mountain. The eruption was repeated in 1744.

Ulloa, vol. 1.

Venice ſuffered by an inundation in 1743, and the year was remarkable for violent ſtorms, at Boſton, Jamaica, and in many countries.

In December 1743 appeared a comet of diſtinguiſhed magnitude, which was viſible till February of the following year. This was probably the ſame which appeared in 1401, and in both inſtances attended with peſtilence.

In 1744 ſevere catarrh ſpread over Europe. It was at Rome in February; at London in March; and in a few weeks pervaded England.

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* "New-York, Oct. 24, 1743. By the Mayor of the City.
An account of perſons buried in the city of New-York,

From July 25th to Sept. 25, 1743.		From Sept. 25 to Oct. 22d.	
Children,	51	Children,	16
Grown perſons,	114	Grown perſons,	36
	165		52
			165
			217

And I do find by the beſt information I have of the doctors, &c. of this city that the late diſtemper is now over.

JOHN CRUGER, Mayor."

New-York at that time contained about 7 or 8000 inhabitants.

In June of this year, was an earthquake of conſiderable violence in New-England.

In 1745 Lima was ſhaken by an earthquake. An infectious fever broke out among the troops employed in the expedition to Louiſbourg. A ſimilar fever prevailed at Boſton; and how far the health of the town was affected by the returning troops, I am not informed. This was a time of general ſickneſs.

In Charleſton prevailed the infectious yellow fever, while Egypt and Smyrna were ſuffering the ravages of the plague. The bilious plague prevailed, at the ſame time, in New-York.

In this year, the town of Stamford in Connecticut was ſeverely diſtreſſed by a malignant dyſentery, which ſwept away ſeventy inhabitants out of a few hundreds. The diſeaſe was confined to one ſtreet.

The year 1746 was probably ſtill more unhealthy. An earthquake laid Lima and Calao in ruins. The concuſſion began on the 28th of October, about ſix hours before the full of the moon; and at intervals, the ſhocks were repeated for four months, in which time they amounted to four hundred and fifty. During theſe convulſions, fire burſt forth in ſeveral places of the diſtant mountains. Many days before the ſhocks began, hollow rumbling noiſes were heard in the earth, at times reſembling the diſcharge of artillery. Similar ſounds continued for ſome time after the earthquake.

See the melancholy tale in Ulloa, vol. 2. 83.

Albany was, in this year, viſited by a malignant diſeaſe called by Colden, a nervous fever; and by Douglas, the yellow fever. From an old citizen, who was living in 1797, my friend Dr. Mitchell obtained the following particulars relative to that diſeaſe. The bodies of ſome of the patients were yellow—the criſis of the diſeaſe was the ninth day; if the patient ſurvived that day, he had a good chance for recovery. The diſeaſe left many in a ſtate of imbecility of mind, approaching to childiſhneſs or idiocy; others were afterwards troubled with ſwelled legs.

The diſeaſe began in Auguſt, ended with froſt, and carried off forty-five inhabitants moſtly men of robuſt bodies. It was ſaid to be imported.

As this was an unuſual diſeaſe in Albany, ingenuity was occupied to find out its origin. It was *reported* that a like diſeaſe prevailed in New-York, and that it had been imported in a veſſel from Ireland. Nervous, yellow fever imported from Ireland! Such are the vulgar tales that diſgrace this age of ſcience and philoſophy. From what fairy land were imported the malignant diſeaſes, which every where ſwelled the bills of mortality in the ſame year?—Not that I would inſinuate that diſeaſes of a certain kind are not infectious. A peſtilential fever originated in the Chebucto fleet, under the Duke D'Anville, which landed an army on our ſhores in this ſame year, and one third of the Indians who viſited the cantonments, died. There the diſeaſe ſubſided, without becoming epidemic.

But what I ſeverely reprobate is, the diſpoſition of men to trace all the evils of life to a foreign ſource; when the ſources are in their own country, their own houſes, and their own boſoms.

A ſimilar diſeaſe raged, the ſame year, among the Mohegan Indians.

See the poſtſcript at the end of the volume.

At Zurich in Switzerland and in Saxony prevailed a very malignant dyſentery. Indeed for a number of years, at this period, dyſentery was epidemic in many parts of Europe and America.

In 1747 prevailed epidemic catarrh in America and Europe. In the ſame year the bilious plague prevailed in Philadelphia.—In 1748, in Charleſton. The ſame years were ſickly in Boſton.

In 1747 appeared a comet, and Etna, which had been quiet more than forty years, commenced her diſcharges of fire and lava. In the Weſt-Indies, a tremendous hurricane laid waſte the Iſlands.

Two comets appeared in 1748; the winter was ſevere, and two or three exceſſively hot and dry ſummers ſucceeded. In England the ſummer of 1747 was very dry. In 1748 a faſt was appointed in Maſſachuſetts on account of the drouth.

In England the angina maligna continued its ravages with increaſed mortality. The ſame malady prevailed in France in 1749, and there was an earthquake at London. The 18th of

June was a noted hot day, and Mars was as near to the earth as her orbit will permit.

Almanack for 1749.

In 1749 the dyſentery and nervous long fever viſited many towns in Connecticut with diſtreſſing mortality. Waterbury ſuſtained a loſs of about 130 of her inhabitants principally by dyſentery. Cornwall, then a new ſettled village, on high mountains, loſt twenty of her citizens. Hartford was ſeverely viſited with intermittents, for the laſt time. The ſummer was very dry, and locuſts or graſs-hoppers overrun the fields and devoured the herbage.

Douglas, vol. 2. 208.

I am authorized to ſay that the terrible dyſentery in Woodbury did not appear to be very contagious—it excited great alarm; every one avoided the ſick, if poſſible; but many who lived remote and never came near the ſick, were ſeized, and ſuddenly died.†

In 1749 and 50 the dyſentery, according to Zimmerman, made great havoc in the Canton of Berne. It is remarkable that this formidable diſeaſe ſhould be thus prevalent in both hemiſpheres at the ſame time, and for a ſeries of years. About this time meaſles prevailed in America.

In 1750 appeared a comet, and the ſummer was exceſſively hot. In Philadelphia, the heat raiſed the mercury to 100 deg. by Farenheit. The plague carried off 30,000 people in Fez, and one third of the inhabitants of Tangiers.

Violent tempeſts marked this year, in America, and an unuſual ſwell of the Severn in England. Earthquakes happened in England, Jamaica, Peru, Leghorn, Rome, Sicily and Lapland.

At Beauvais, 50 miles from Paris, broke out a peſtilential diſeaſe, called la Suete, reſembling the ſweating ſickneſs, terminating fatally in three days.

See Gent. Magazine.

At Bethlem in Connecticut raged a mortal fever, which ſwept away between thirty and forty of the inhabitants. The exciting cauſe was ſuppoſed to be the exhalations from a ſwamp which

† M. S. letter from Z. Bears.

had been drained. It is not improbable that this might have aided the general principles of diſeaſe.

Med. Repoſ. vol 1. p. 523.

The winter of 1750-51 is mentioned as extremely ſevere in America. Veſuvius diſcharged fire and lava, in 1751, and on the 7th of March, a moſt dreadful tempeſt at Nantz in France, deſtroyed 66 ſhips, with 800 lives. On the ſame day, a tempeſt at Jamaica did damage to the amount of a million of dollars. A ſtorm at Cadiz on the 8th of December deſtroyed 100 ſail of ſhipping. On the Adriatic coaſt was an earthquake.

In this year Conſtantinople loſt 200,000 inhabitants by the plague.—The preceding winter was cold in Turkey, and the old people predicted a ſevere plague from the quantity of ſnow that fell in Conſtantinople. This prediction was founded on long obſervation ; and I am able to confirm the juſtneſs of it, by diſcovering that thoſe years which produce the moſt violent action or diſcharges of electrical fire, generate moſt ſnow, hail and cold.

Chenier's Morocco vol. 2. 275.

In America the ſpring flights of pigeons were unuſually large. The dyſentery was epidemic and mortal, in the ſame year, at Hartford and New-Haven ; probably in many other places.—With this fatal dyſentery prevailed a mortal angina for ſeveral years. The ſame concurrence of theſe diſeaſes will be mentioned under the year 1775.

In England, the ſummer of 1751 was cold and wet ; and a mortal diſtemper prevailed among horſes and cattle, in moſt parts of the country. In Cheſhire died 30,000 cows. In Glaſgow the ſeaſons were very ſickly.

Gent. Magazine.

Great and uncommon inundations occurred in the ſame year, in France, England and Scotland. In Cork the water was three feet deep in the midſt of the city.

The dyſentery and ulcerous ſore throat were very fatal, this year in Guilford.

In 1752 the ſummer in South-Carolina, and probably in all parts of America, was diſtinguiſhed for intenſe heat. The thermometer, for nearly twenty days ſucceſſively, varied between

90 and 101.—The effects of this heat were viſible in a number of ſudden deaths by apoplexies. There were ſome caſes of bad fever, but no epidemic. In September a violent tempeſt laid the city under water. The dyſentery was ſtill prevalent in the northern parts of America.

Muſeum, vol. 3. 316 and ſequel, Dr. Chalmers.

In Ireland prevailed angina of ſuch a malignant type, as to kill the patient ſometimes in eight or ten hours. See Rutty on weather. The plague raged in the Eaſt.

An. Reg. 1766. 100.

In this year Adrianople was nearly deſtroyed by an earthquake. In Hinſdale, on Connecticut river, in the ſtate of New-Hampſhire, was an eruption of fire from a volcanic mountain, called weſt river mountain.

Mem. Am. Acad. vol. 1. 316.

In America the winter of 1752-3 was long and ſevere.

I have no account of any general epidemic in 1753; but particular places were viſited with diſtreſſing ſickneſs. A ſingular inſtance of a local peſtilence occaſioned by vapor deſerves to be related.

In autumn 1753 after a dry ſeaſon, aroſe in Rouen, the chief city of Normandy, a thick fog, with the ſmell of ſulphur, which increaſed to that degree, that in the evening, lights could not be diſtinguiſhed at any conſiderable diſtance. It did not wholly diſappear, till the next day. It was more denſe in ſome ſtreets than in others.

In three or four days after, began an epidemic ſickneſs which ſeized both ſexes, with chills, laſſitude, loſs of appetite, ſlight pains in the arms and legs. Theſe ſymptoms were followed by bilious looſeneſs, nauſea and vomitings. Moſt patients bled at the noſe, frequently in ſmall quantity. The head-ache then became violent, with a ſmall, hard pulſe—a high fever followed. The region of the ſtomach and hypochondria was tumefied; this ſymptom was ſucceeded by a tenſion of the belly—and a ſlight delirium followed. The tongue was brown or black, but moiſt; ſometimes with green ulcers or apthæ. The patient died the 5th, 7th, or 11th day; but not in every caſe. Some were thirty, or forty days in recovery; many were left with a puffineſs of the face, hands and legs.

In ſome other parts of France appeared peripneumony and inflammation of the pericordium, which was called a new diſeaſe.

Phil. Tranſ. vol. 49.

In December 1753 and January ſucceeding, the ſmall town of Holliſton, in Maſſachuſetts, loſt forty-three of its citizens, by a fever. The diſeaſe began with a violent pain in the breaſt, or ſide, not often in the head; then ſucceeded a high fever, but without delirium. The critical days were the 3d, 4th, 5th, or 6th. Some of the patients appeared to be ſtrangled to death. The town contained no more than 80 families.

Hiſt. Collections, vol. 3. 19.

The winter of 1753-4 in Europe was very cold. In 1754 was a great eruption of Veſuvius which laſted ſeveral weeks, and violent earthquakes in England, Conſtantinople, and Amboyna, in the Eaſtern Ocean. The heavens appeared to be in a flame, and Egypt, which rarely feels earthquakes, was ſeverely ſhaken, and 40,000 of the inhabitants of Cairo, periſhed in the ruins of two thirds of the city.

The gangrenous ſore throat was very mortal in Ireland, and prevalent in England. See Rutty on weather. The ſame ſpecies of angina was, at the ſame time, very fatal in America.

See Belknap's Hiſt. N. Hampſhire, vol. 2. 121.

In Maryland, the earth was deluged with exceſſive rains, and intermittents were unuſually obſtinate.

Gent. Mag. 1755.

At this time there were two or three very mild winters in America. In 1754-5 and 1755-6 ſloops ſailed from New-York for Albany in January and February. Smith's Hiſt. N. York, 82. In this inſtance, America is an exception to the general rule, that ſevere winters extend over both hemiſpheres, about the time of great volcanic eruptions. The ſeverity was limited to the other continent.

The year 1755 was remarkable for violent earthquakes, and volcanic eruptions from Etna and the mountains in Iceland. In April, Quito in South-America was demoliſhed.

Portugal had ſuffered for three or four years, moſt exceſſive drouth, by which all ſprings were exhauſted. But the year 1755 was rainy. On the firſt of November, a tremendous convulſion laid Liſbon in ruins, with the deſtruction of 50,000 lives. This ſhock was felt on the whole Spaniſh coaſt, and 10,000 people periſhed on one of the Azores. In Mitelene, an iſland in the Archipelago, 2000 houſes were deſtroyed. The day preceding this concuſſion was remarkable for a haze of vapor that obſcured the ſun.

On the 18th of November, America ſuſtained a violent and extenſive ſhock; but its effects were not very calamitous. The fiſh in the ocean did not eſcape without injury. Two or three whales, and multitudes of cod were ſeen, a few days after, floating on the ſurface of the water.

In the remarkable year 1755, the moſt prevalent epidemics ſeem to have been angina maligna, and catarrh, which ſpread over France and England. The angina maligna was very mortal in ſome parts of America. In one town on Long-Iſland, two children only, under twelve years of age, ſurvived.

M. S. of Mr. Reeve.

In this year alſo prevailed a petechial fever in Ireland, and according to Baron de Tott, Conſtantinople loſt 150,000 inhabitants by the plague.

See his Memoirs, Fothergill on ſore throat and Rutty on weather.

The winter of 1756-7 in Syria was exceſſively ſevere; the fruits were deſtroyed, olive-trees, which had withſtood the weather for fifty years, were killed, and thouſands of poor people periſhed with cold.

Lon. Mag. 1764.

In the following ſummer, crops failed, a dearth enſued, and ſo ſevere a famin that parents devoured their own children; the poor from the mountains offered their wives for ſale in market, to procure food.

Ibim.

This winter was alſo very ſevere in Europe. In 1756 appeared a comet and there was an eruption in Iceland. A meteor was ſeen in France, and earthquakes were experienced in various places.

In 1756-57 the catarrh was very prevalent in America, followed by an earthquake in July. This catarrh preceded the ſame eipidemic in Europe by one year.

In 1758 catarrh ſpread over Europe, and the plague began to ſhow itſelf in Egypt and Smyrna. In November, a large meteor was ſeen in Great-Britain, and is deſcribed by Sir John Pringle in the Philoſophical Tranſactions.* In this year alſo, the petechial fever, the precurſor of the plague, began to ſhow itſelf, in Aleppo.—The ſummer in America was extremely hot.

Letter of Gov. Ellis, Muſeum, vol. 5. 151.

In 1759 appeared two or three comets; and in November a moſt tremendous eruption of Veſuvius. In Auguſt was an earthquake at Bourdeaux—and one at Bruſſels. The winter following 1759 was exceſſively cold in both hemiſpheres. In Leipſic, centinels froze to death; and in South Carolina, the ſnow covered the earth to the depth of nearly two feet. In England, the cold was leſs ſevere.

The year 1759 was memorable for violent earthquakes, in Syria. Buildings were demoliſhed and Damaſcus was buried in ruins. The ſhocks were repeated for many weeks. In November, Truxillo in Peru was ſwallowed up by means of an earthquake. It will be obſerved that this happened in the month, when Veſuvius was in eruption. Theſe great phenomena announced a general and ſevere peſtilence, and the effects of the general principles of diſeaſe were ſoon felt over Europe, Aſia and America. Annual Regiſter, 1761. 96 and paſſim. The earthquakes in Syria were preceded by drouth and followed by exceſſive rains.

See Ruſſel on the plague at Aleppo and Volney's Travels.

In 1759 the plague began to appear in Cyprus, and at Acre and Latakia on the Syrian coaſt. In Copenhagen raged ſmallpox with great mortality.

In New-England were ſhocks of earthquake in February, at Boſton and Portſmouth. An. Regiſ. 1759. 88. In Autumn an unuſual tempeſt and tide at Nova Scotia.

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* Seen from Dublin, it moved from ſouth to north. Annual regiſter, 1759. 58.

In America, cotemporary with the commencement of the plague in Egypt, appeared the meaſles, in 1758, and the year 1759 appears, by the American bills of mortality, to have been very unhealthy. The predominant diſeaſes were the meaſles and dyſentery. M. S. letter from Dr. Betts of Norwalk. The meaſles appeared in 1758, but was moſt extenſive in 1759. This is an inſtance of the prevalence of dyſentery and meaſles in the ſame year.

In this year alſo the ſcurvy, an endemical diſeaſe in Canada, was unuſually mortal.

Lind, p. 26.

At Bombay, a meteor of extraordinary brightneſs was ſeen on the 4th of April, 1759.

After the ſevere winter of 1759-60, happened in America, a ſnow ſtorm on the 3d of May, when the apple-trees were in bloſſom. The diſpoſition of the elements to generate ſnow and hail, during peſtilential periods, has already been remarked. M. S. of Mr. Whitman. The ſpring of 1760 in America was very dry.

In 1760 earthquakes were repeated in Syria, and the plague appeared at Aleppo, Jeruſalem and Damaſcus. It continued to extend and increaſe, until the ſummer of 1762; after which it declined. In Holland and Belgium were ſmall ſhocks of earthquake—preceded by flaſhes of light. Annual Regiſter 1760. 70. Ruſſel on the plague at Aleppo. Indeed earthquakes were felt in moſt parts of Europe.

Cyprus, which had been free from peſtilence for 30 years preceding, loſt 20,000 inhabitants by the malady. On the firſt appearance of the plague in Egypt, the magiſtracy publiſhed an ordinance to prevent the introduction of the diſeaſe by infection; but it was of no uſe. The diſeaſe was preceded, as uſual, by a petechial fever.

Mariti's Travels.

In England, the ſummer of 1760 was dry and autumn wet. In this year occurred another diſcharge from Veſuvius.—A comet was ſeen in January, and a diſtemper made great havoc among horſes in and about London. Annual Regiſter 1760. 67. Immenſe damage was ſuſtained by tempeſts. Ibm. 73.

The principles of diſeaſe in 1760 began to exhibit themſelves in the Weſt-Indies, and the ordinary fever of the climate aſſumed new and malignant ſymptoms, with contagion.

Lind, p. 126.

In this year alſo the northern parts of the American continent, which had been overrun by meaſles, began to feel more ſeverely the violence of the epidemic conſtitution.

In November, the town of Bethlem was aſſailed by an inflammatory fever, with ſymptoms of typhus, which in the courſe of the following winter, carried off about 40 of the inhabitants. The diſeaſe was extremely violent, terminating on the 3d or 4th day; in ſome caſes, the patient died within 24 hours of the attack. It ſeems to have been that ſpecies of winter fever, which occurs in peſtilential periods, mentioned under the year 1698. During this epidemic, a flock of quails flew over the chimney of a houſe, in which were ſeveral diſeaſed perſons, and five of them fell dead on the ſpot. This was thought ominous; but was a natural event, which may rationally be aſcribed to deleterious gas emitted from the chambers of the ſick.

Med. Repoſ. vol. 1. 524.

This diſeaſe was aſcribed to the draining of the pond or ſwamp, mentioned under the year 1750. But to this explanation, there are ſtrong, if not inſuperable objections.

Firſt. The fever began in November; but this is the month when the marſh fevers of our climate diſappear. I doubt whether the effluvia from marſhes ever act upon the human body, ſo as to produce diſeaſe, without a greater degree of heat than Connecticut ever experiences in the month of November. Cold puts an end to all marſh fevers, but this diſeaſe continued to increaſe in December, and did not ceaſe till late in the winter.

Secondly. This diſeaſe was called a malignant pleuriſy; but marſh effluvia are not known to produce fevers of that deſcription. They are common on high, as well as on low grounds, as I can prove by facts in America.

Thirdly. There is no neceſſity of reſorting to marſh exhalations for the ſource of this malady. The ſame ſpecies of fever prevailed in that winter and the ſpring following, in many other parts of Connecticut, where no marſh exiſted. In Hartford it carried off a number of robuſt men, in two or three days from the attack.* In North-Haven it attacked few perſons, but every one of them died. In Eaſt-Haven died about forty-five men in the prime of life, moſtly heads of families. The ſame diſeaſe prevailed in New-Haven among the inhabitants, and ſtudents in college.

It is obvious then that this was an epidemic, very well known in ſickly periods, and not dependent on local cauſes. From Dr. Trumbull of North-Haven I have the following remarks on the diſeaſe.

The blood was very thick and ſizy; often iſſuing from the noſe and ſometimes from the eyes. The inflammation was violent, and ſoon produced delirium. The moſt robuſt bodies were moſt liable to the diſeaſe. A free uſe of the lancet, in the early ſtages of the diſorder, was the only effectual remedy; where the phyſicians were afraid to bleed, the patients all died.† This malady prevailed from November 1760 to March 1761.

I cannot learn that this ſpecies of inflammatory fever, has ever been epidemic in the northern parts of America, ſince this period. But it is a common winter fever, in the Carolinas, after ſickly ſummers; and in the northern ſtates, ſporadic caſes of it occur with all its formidable ſymptoms. Inſtances will be hereafter mentioned. It is the peſtilence of winter, and rarely, if ever appears, except when peſtilential epidemics are current in ſummer. And I am not without ſuſpicions that the debility occaſioned by marſh effluvia in ſummer may prediſpoſe the ſyſtem to that fever in winter, tho not neceſſary to produce it.

In March 1761 was a ſmall ſhock of earthquake in New-England, and the ſame occurred in Iceland, Hamburg, Syria, England and South-America.

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* One of them was my paternal uncle.

† Dr. Hugh Williamſon, in the ſecond volume of the Medical Repoſitory, has deſcribed this ſpecies of diſeaſe, which, he ſays, prevails often in Carolina in winter, eſpecially among thoſe who have been affected by bilious fevers in the preceding autumn. He obſerves that bleeding is uſually pernicious in that diſeaſe. Perhaps a difference of climates may make different remedies neceſſary. But in different periods, the ſame diſeaſe may require different treatment. In New-England, that fever has uſually demanded an early uſe of the lancet.

In the winter and ſpring of 1761 a ſevere influenza attacked the northern parts of America. In Bethlem it was cotemporary with the fever juſt mentioned. In Philadelphia it prevailed in the winter, and in Maſſachuſetts, in April. From Dr. Tufts, a reſpectable practitioner of medicin in Weymouth, I have the following deſcription of the diſeaſe.

" The diſtemper began in April, and in May ran into a malignant fever, which proved fatal to aged people. It ſpread over the whole country and the Weſt-India iſlands. It began with a ſevere pain in the head and limbs, a ſenſation of coldneſs, ſhiverings ſucceeded by great heat, running at the noſe, and a troubleſome cough. It continued for eight or ten days, and generally terminated by ſweating.

In May, the aged who had before eſcaped, were ſeized with an affection like a ſlight cold ; this, in a day or two was followed by great proſtration of ſtrength, a cough, labor of breathing, pains about the breaſt, præcordia, and in the limbs, but not acute. The countenance betrayed no great marks of febrile heat. The matter expectorated was thin, but ſlimy. As the diſeaſe advanced, the difficulty of breathing encreaſed ; the expectoration was more difficult ; the matter thrown off more viſcid ; at length the lungs appeared to be ſo loaded with tenacious matter, that no efforts could diſlodge it, and the patient ſunk under it.

This diſorder carried with it bilious appearances—the countenances of ſome patients were of a yellowiſh hue. In ſome, there was an appearance of indifference or inſenſibility ; and at night, a ſlight delirium."

M. S. letter from Dr. Tufts.

In the ſpring of 1761 earthquakes were felt in many parts of Europe. See an account of them in An. Regiſter, 1761. 92. Shocks alſo were felt in the Azores and Weſt-Indies. Theſe agitations were preciſely cotemporary with the epidemic catarrh in America. Scarcely any country eſcaped the convulſions of nature. During the peſtilence in Theſſalonica, ſhocks were felt almoſt every day. Ibm.

In the ſummer of 1761, I am informed, the infectious bilious fever prevailed in Charleſton, but I am not poſſeſſed of the details.

In May happened a moſt extraordinary typhon or whirlwind, which ſwept Aſhly river to its bottom. Five veſſels were ſunk and eleven diſmaſted. Annual Regiſter, 1761. 93. In Italy a woman was killed by a ſudden eruption of vapor under her feet. Ibm. 95. The ſummer in America was very dry.

In the ſpring of 1762 the influenza was epidemic in Europe. It appeared at Edinburgh in April in a few caſes; at Dublin in May; and in June was general and ſevere. It was therefore a year later than in America.

Eſſays and Obſ. Edinburgh. Rutty on weather. An. Reg. 1762.

In March was an earthquake in Ireland, and in autumn a conſiderable ſhock in Spain. On the 11th of June was ſeen a meteor, paſſing from north to ſouth, which met a dark cloud and exploded. Another as large as the moon, and bright as the ſun deſcended ſlowly on the 4th of December, and diſſipated.

Annual Regiſter, 1762.

In 1762 appeared a comet, and in America the heat and drouth exceeded what was ever before known. From June to September 22d, there was ſcarcely a drop of rain, almoſt all ſprings were exhauſted, and the diſtreſs occaſioned by the want of water was extreme. The foreſt trees appeared as if ſcorched.

The winter following was equally remarkable for ſeverity, both in Europe and America. The Thames was a common highway for carriages, and the poor periſhed in the ſtreets of London.

Lond. Mag. 1763. Annual Regiſter, 1762.

In America the ſnow fell on the 8th of November and continued till about the 20th of March. Theſe extraordinary phenomena were followed by an eruption of Etna in 1763, of three months contiuance.

In the extremely hot ſummer of 1762, the bilious plague prevailed in Philadelphia. The ſame diſeaſe ſwept away moſt of the troops in the expedition to Havanna. The plague raged in Conſtantinople and in Syria; while the yellow fever ſpread mortality in Bengal.

In this year the plague in Aleppo came to its criſis. In 1760, died about 500 perſons; in 1761, 7000, and in 1762, 11000; after which year it ſubſided.

See Patrick Ruſſel, Hiſt. of that plague.

The bills of mortality will beſt ſhow how ſeverely the principles of diſeaſe were felt in London, Amſterdam and Dublin in 1762 and 3.

No part of the earth ſeems to have eſcaped a ſhare of unuſual mortality in the period between 1759 and 1763. In the latter year, the bilious plague in Bengal carried off 800 Europeans and 30,000 natives. Lind, p. 82. In the year preceding, a violent earthquake occurred at Chitacong in the territories of Bengal.

An. Reg. 1763. 60.

On the 19th of October 1762, happened a remarkably dark day at Detroit, and the vicinity. While at dinner, the inhabitants found it neceſſary to uſe candles. The darkneſs continued, with little interruption, during the whole day.

Phil. Tranſ. vol. 53. p. 63. Mem. Amer. Acad. vol. 1. 244.

During this peſtilential period, fatal diſeaſes carried off the cattle on the continent of Europe, and Toulon loſt one third of its inhabitants by an epidemic.

An. Regiſt. 1761. 161.

The ſummer of 1763 was a moiſt and unkindly ſeaſon. In Auguſt the Indians on Nantucket were attacked by the bilious plague, and between that time and February following, their number was reduced from 358 to 136. Of 258 who were affected, 36 only recovered. The diſeaſe began with high fever and ended in typhus, in about five days. It appeared to be infectious among the Indians only; for no whites were attacked, altho they aſſociated freely with the diſeaſed. Perſons of a mixed blood were attacked, but recovered. Not one died, except of full Indian blood. Some Indians who lived in the families of the whites, eſcaped the diſeaſe; as did a few that lived by themſelves on a diſtant part of the iſland. I am informed, by reſpectable authority, that a ſimilar fever attacked Indians on board of ſhips, at a diſtance of hundreds of leagues, without any connection with Nantucket.

In December of the ſame year, the Indians on Martha's Vineyard, diſtant eight leagues from Nantucket, were invaded by a like fever; not a family eſcaped, and of 52 patients, 39 died.

In this inſtance, diſeaſe diſcriminated as nicely between the Whites and Indians, as in 1797, it did between men and cats, and as exactly as the plague in Egypt, between the Iſraelites and Egyptians.

Some ſuſpicions were ſuggeſted that the diſeaſe at Nantucket might have been received from a ſhip which put in there, with ſick paſſengers, from Ireland bound to New-York; but there is no foundation for this opinion, as the diſorder broke out before the arrival of the ſhip.

See Phil. Trans. and Lond. Mag. 1764. Hiſt. Collections, vol. 3. 158. M. S. of Moſes Brown.

In 1764, juſt after this fatal peſtilence among the Indians, a large ſpecies of fiſh, called *blue fiſh*, thirty of which would fill a barrel, and which were before caught in great numbers, on every ſide of Nantucket, ſuddenly diſappeared, to the great loſs of the Inhabitants.—Whether they periſhed or migrated, is not known.

Hiſt. Col. 3. 158.

In Europe, the year 1763 was remarkable for diſeaſes among various ſpecies of animals. In Denmark, an epidemic catarrhal diſorder affected horſes. In Madrid, a peſtilence among dogs ſwept away multitudes—900 died in one day. In Genoa, the poultry periſhed in a ſimilar manner. In Italy, horſes and ſwine fell victims to the peſtilential principle. In France, horſes and mules; in Sweden, ſheep, horſes and horned cattle periſhed under the influence of the general cauſe.

Rutty on Weather.

The ſummer was remarkable for hail ſtorms, one of which totally ruined 36 villages in Maconnois in France. See the account of theſe and of the earthquakes in that year in An. Regiſ. Chronicle. Hail ſtones fell of ſizes from three to ten inches in circumference. Theſe ſtorms were numerous and many fire balls fell in various parts of England and a globe of fire was ſeen in Sweden.

Theſe hail ſtorms occurred during or near the time of the eruption of Etna. In 1764 was another eruption of Etna. In moſt parts of Europe and America, this period of peſtilence appears to have cloſed with the years 1762 and 3. But in Naples ſpread a malignant fever in 1764, preceded by famin, by which diſeaſe it was ſuppoſed 200,000 people periſhed. The diſeaſe

was marked by petechiæ and glandular tumors and was a mild ſpecies of plague. The ſeaſon was exceſſively hot, and the bilious plague prevailed in Cadiz. Lind, 189. 122. An earthquake occured in Portugal and Siberia. In the February following occured a degree of cold, rarely known in England. The mercury in Farenheit fell to 7 deg. and in one place, within the ball. An. Reg. 1765-66. A remarkable high tide in China in May ſwept away a whole city. The cauſe is not mentioned.
Ibim. 92.

To the epidemics above mentioned, ſucceeded a ſeries of dyſenteries, in the hot ſummers of 1765 and 6. In 1765, the malignant dyſentery raged in Berne and other parts of Switzerland, in Suabia and Auſtria. The invaſion was, in many caſes ſudden, ſays Zimmerman, without any preceding ſymptom; but more generally its approach was indicated by chills, laſſitude and other premonitory ſigns. In its progreſs, it exhibited moſt of the ſymptoms of the yellow fever of America. It was preceded by a putrid fever, which yielded to the dyſentery in June.
See Zimmerman on Dyſentery.

This epidemic was followed by violent and malignant pleuriſies; a circumſtance that marks its alliance with the peſtilential fever of America, and probably of all temperate climates, which is alſo ſucceeded by pleuriſy or peripneumony in winter.

In 1765 were many earthquakes in Italy, and Sweden, and a volcanic eruption at Truxillo in Spaniſh America. Dyſentery prevailed in Scotland, and intermittents in Pennſylvania and Georgia, were univerſal.

In 1766 the ſummer was every where hot and in Europe exceſſively dry.* In Germany, the Rhine was lower than in the terrible drouth of 1476, and in many places, was forded. In Scotland, the people were compelled to kill their cattle for want of fodder. The heat and drouth produced great hail ſtorms, and in autumn, were followed by inundations, one of which at Montauban, in France, ſwept away 1200 houſes. Terrible tempeſts marked the year, and in the Weſt-Indies, thoſe hurricanes which lay the iſlands waſte, and are recorded among the memorabilia of the climate. In Auguſt, the planet Mars was nearer to the earth, by two millions of miles, than it had been for many ages, and in the ſpring appeared a comet.

The winter preceding this remarkable ſummer, was extremely cold in Europe. At Ratiſbon, Reaumur's thermometer was two degrees lower, than in the noted year 1709, and birds periſhed with cold. At Naples, the ſnow lay in the ſtreets, to the depth of 18 inches, and Veſuvius began to diſcharge ſmoke, the harbinger of an exploſion. At Liſbon, Reaumur's thermometer was $3\frac{1}{2}$ degrees below the freezing point, and at Madrid, people ſkated on the ice.

Theſe remarkable phenomena preceded and attended a general diſcharge of fire and lava, from the three well known volcanoes, Etna, Veſuvius and Heckla, which took place in 1766. This is one of the few inſtances on record, in which theſe volcanoes have been in eruption, nearly at the ſame time. The eruption of Heckla continued from April to September. Theſe phenomena account for the exceſſive drouth in Europe.

See Sinclair's Scotland. Annual Regiſter, 1766.

In this year 1766 was an earthquake in New-England, and a violent ſhock at Conſtantinople. Vegetation failed in ſome parts of Europe and America, and grain was very ſcarce in Italy, Great-Britain and the Carolinas. In 1767 a million ſterling was paid in England for imported grain.

An. Reg. 1768. p. 101.*

The winter of 1765-6 was not ſevere in America and there was little ſnow; but in this remarkable period, as in many others, the ſeverity of the ſeaſons commenced in Europe one year before it did in America. The winter of 1766-7 was terribly ſevere in both hemiſpheres. The cold was as intenſe as in 1740; the Rhine at Cologne became a bridge of ice, and ſupported laboring artificers, as in 1670. In Italy, the poor crouded to the cities for aid, and periſhed with cold. In Ruſſia, both rich and poor periſhed. The wolves became ravenous, entered towns and deſtroyed people. In England, the larks took refuge in hay-carts and the market; the ſnow fell to the depth of many feet and buried thouſands of ſheep. In America, the cold was very ſevere, and at Brandywine, the mercury fell in Farenheit to 20 deg. below cypher—an unexampled degree of cold in that latitude. In January happened a thaw, which broke up the rivers in Connecticut, and left ſcarcely a bridge over the rivers. The cold in France in 1767-8 was more ſevere than in 1740 and within a degree of that in 1709. In Conſtantinople ſnow and hail fell as late as March 16.

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* I am ſtruck with ſurpriſe to obſerve how univerſally crops fail, about the time of great volcanic eruptions.

See An. Regiſ. 1767. p. 52, 53, 54, 76. 1768. p. 58, 101.

Every thing indicated uncommon agitations in the elements. Pages would be neceſſary to enumerate the tempeſts and hail ſtorms of theſe years. In January 1769 fell two fire balls in England; one of them on Tower hill. At Amiens, a man his wife and his horſes were killed by a diſcharge of ſubterraneous vapor. A violent ſtorm in Virginia on the 11th of September tore up trees, ſtranded ſhips and demoliſhed houſes; Bagdadt was almoſt ruined by an earthquake, and Cuba was deſolated by a hurricane in 1768. An. Regiſter, 1769. 67. 146. Theſe laſt years in England were rainy.

In 1767 epidemic catarrh prevailed in Europe, and diſeaſes among horſes in New-England and New-Jerſey. The ſummer was remarkable for hail ſtorms; Cephalonia was ruined by an earthquake, and Veſuvius, from this year to 1777 never ceaſed to diſcharge ſmoke, and frequently ſcoriæ, ſtones and cinders.

An. Reg. 1767. 142, 151. Encyclop. art. Veſuvius.

In 1768 vaſt multitudes of caterpillars devoured the graſs in the fields at Northampton, in Maſſachuſetts.

The ſummer of 1768 was hot, but I have no account of the diſeaſes in America in this and the preceding year, except of a diſorder in the head and throat among horſes.

Mem. Am. Acad. vol. 1. 529.

In 1769 the ſummer was very hot, and in autumn appeared a comet with a vaſt coma. Venus paſſed over the Sun's diſk on the 3d of June; there was a ſmall earthquake in New-England and a great tempeſt. Among the diſeaſes in America is mentioned a fatal angina in Boſton, and other towns, but I am not furniſhed with its hiſtory. The ſame diſtemper prevailed in 1770, and in Jamaica occaſioned conſiderable mortality.

Muſeum, vol. 1. 35, 430.

In Holland 32,000 cattle periſhed by a peſtilential diſtemper. An. Reg. 1769. 166. Great ſickneſs prevailed at Rome. Ibm. In America ſome caſes of canine madneſs were obſerved. The meaſles prevailed in America, but I have no details of its origin and progreſs. The dyſentery was epidemic and fatal in 1769.

In July 1770 appeared alſo a comet. There was an eruption of Veſuvius in 1770, and another in 1771. Flames iſſued from Heckla in 1771 and 72, but no lava. An earthquake was felt in New-England in 1771, and Italy was repeatedly ſhaken. On the 17th of July was ſeen a meteor or fire ball.

Theſe two years were diſtinguiſhed by the moſt terrible earthquakes, ſtorms, rains and inundations, accounts of which fill the gazettes of thoſe years. In 1770 the floods in England, Holland and France exceeded any that could be recollected. In France the vintage was greatly injured. In 1771 the territory of Honduras was waſted by locuſts and famin.

An. Reg. p. 163.

In 1771 great rains continued to occaſion floods. In Virginia, a flood in the Rappahannock filled the warehouſes and ruined the tobacco, which occaſioned public prayers to be ordered. Similar inundations happened in Germany.

There were earthquakes in Hiſpaniola, St. Maure, England, and in Ternate, a Molucca iſland, where was an eruption of fire.

Gent. Magazine. An. Regiſ. 1770, paſſim 1771. 120.

In 1771 a mortal diſtemper ſwept away great numbers of foxes in America.

Mem. Am. Acad. vol. 1. 529.

In Italy the harveſt failed, and in Sardinia, Holland, Flanders, and ſome parts of England, the cattle were ſwept away by an infectious diſeaſe. The number of cattle that periſhed in Holland, was ſtated, in Sept. 1771, to amount to 171,780.

An. Regiſ. 1771. 147.

In Conſtantinople raged the plague in 1770; and one thouſand bodies were, for ſome time, buried daily. In 1771 this malady prevailed in Poland and Ruſſia, and 200,000 people periſhed. The number that died in the Ruſſian dominions was 62,000.

An. Regiſ. 1772. 155.

In the Eaſt-Indies the diſorders in the elements at this period produced ſtill more deplorable effects. The exceſſive heat and want of rain, which uſually precede or attend the approximation of comets and volcanic eruptions, occaſion a failure of crops in countries, where the grain which is the principal food of the inhabitants, depends on water from inundation. Such is the fact in India and in Egypt, where rice is the great article of food.

The heat and drouth of 1769 cut ſhort the rice crops in the territories of the Ganges. The conſequence was a famin, which, in 1770, deſtroyed incredible numbers of the natives. The ſtreets were filled with dead carcaſes, and ſuch numbers were thrown into the river, as to render the water and the fiſh unfit for uſe.

In 1771 diſeaſe was added to the calamities of the miſerable inhabitants, a million of whom were ſuppoſed to periſh by the bilious plague.

See Encyclopedia, Art. Bengal.

In 1770 the atmoſphere at Calcutta was filled and clouded with flies of a large kind, which never deſcended to the earth, but came ſo near that they could be diſtinguiſhed with glaſſes. It is remarkable that the appearance of theſe animals was cotemporary with the millions of worms which overran the northern diſtricts of America. Encyclop. Article Bengal. The Bramins mentioned that a ſimilar phenomenon occurred about 150 years before, which muſt have been during the peſtilence among the Indians in America from 1618 to 1622. At this time alſo began a diſeaſe among the potatoes in Scotland, which has been gradually extending itſelf to this time. The leaves contract and ſhrivel; and juſt below the ſurface of the earth, there appears on the ſtalk a ſcar of ſome length, or groove corroded through the rind, of the color of ocher. The fruit on the roots is ſmall and of an unpleaſant taſte.

Sinclair's, Scot. 2. 187.

In 1771 anginas, in ſome parts of America, occaſioned a conſiderable mortality.

Regiſter of deaths in New-Haven.

Catarrh prevailed in 1771, but was epidemic in America in 1772. The winter of 1771-2 was very ſevere in Europe. In

America the month of March 1772 was diſtinguiſhed for great falls of ſnow, beyond what was ever before known. In Bohemia, it was computed that 168,000 perſons periſhed in that year by epidemic diſeaſes. An. Reg. 152. A tempeſt in China deſtroyed 150,000 lives in Canton River.

An. Reg. 1773. p. 102.

In 1770, cotemporary with the clouds of flies in India and a moſt fatal peſtilence among men and cattle in Europe, appeared in America a black worm about one inch and a half in length, which devoured the graſs and corn. Never was a more ſingular phenomenon. Theſe animals were generated ſuddenly in the northern ſtates of America, and almoſt covered two or three hundred miles of country. They all moved nearly in one direction, and when they were intercepted by furrows, in plowed land, they fell into them in ſuch numbers as to form heaps. They ſought ſhelter in the graſs, a hot ſun being fatal to them. They diſappeared ſuddenly about the cloſe of June and beginning of July.

New-England Farmer, Art. Inſect.

This ſpecies of worm has been ſeen at other times, and in 1791, in great multitudes. No account can be given of their origin and they ſeem not to have regular periods of return. In July 1791, the late governor Huntington, a gentleman of careful obſervation, informed me, he had expoſed ſome of theſe animals to a hot ſun on a dry board, and in a few hours, found them diſſolved into mere water. They ſeem to be generated by ſome elementary proceſs, and to be the harbingers of peſtilence; at leaſt they have preceded diſeaſes in America.

In February 1772 prevailed in America epidemic catarrh.

M. S. letter from Dr. Tufts.

In this year, the meaſles appeared in all parts of America, with unuſual mortality. In Charleſton, S. Carolina, died 8 or 900 children.

Public prints, Oct. 1772.

A mortal fever prevailed alſo in Wellfleet on Cape-Cod, which proved fatal to forty of its inhabitants. Hiſt. Col. vol. 3. 118. The mortality in Bohemia has been mentioned, and the ſickneſs in London appears by the bill of mortality.

This year, 1772, was diſtinguiſhed for a great hurricane in the Weſt-Indies, like thoſe of 1766 and 1780.

An. Reg. 1772. 140.

The anginas of the preceding year continued to prevail in 1772.

The winter of 1772-3 was moderate in England, but on the continent more ſevere. In February, occurred in America, a remarkable day, ſtill known by the name of the cold Sunday.

This year, 1773, was in general ſickly. In America, the meaſles finiſhed its courſe and was followed by diſorders in the throat. After the meaſles left the patient, came on a ſecondary fever, which, in ſome caſes, proved fatal. Thoſe who ſurvived, lay ill a long time, troubled with an exceſſive expectoration. It ſeemed as if the patient diſcharged the amount of his weight.

But the moſt mortal diſeaſe, was, the cynanche trachealis or bladder in the throat. In general, there was little canker, but an extreme difficulty of breathing; the patient being nearly ſuffocated with a tough mucus or ſlime, which no medicin could attenuate of diſcharge, and which finally proved fatal. All medical aid was fruitleſs, and ſcarcely a child that was attacked in ſome towns, ſurvived.

This diſeaſe was ſpeedily followed, in ſome places by the dyſentery of a peculiarly malignant type, occaſioning mortification on the third day. This diſeaſe was prevalent and very fatal in New-Haven and Eaſt-Haven, in Connecticut, and in Salem, Maſſachuſetts.

M. S. letters from Dr. Trumbull and Dr. Holyoke.

In Philadelphia, the meaſles appeared in March, attended with efflorеſcence about the neck; at the ſame time, catarrh which could hardly be diſtinguſhed from the meaſles.

Ruſh's Works, vol. 2. 238.

Cotemporary with theſe diſeaſes in America, were the ſmall-pox and a fatal fever in ſome parts of Scotland, and a plague which carried off 80,000 people in Baſſora, a town in Perſia, near the Euphrates.

In this year, an earthquake ſunk the town of Guatimala in New-Spain.

The year 1774 was more healthy than the preceding; but the ſcarlatina anginoſa began to ſhow itſelf in Edinburgh, and in ſome parts of America, eſpecially at Philadelphia. On the 4th of May was a fall of ſnow.

Ruſh, vol. 1. 94, and the Britiſh Med. Publications in that year.

The winter of 1774-5 began on the continent of Europe with unuſual ſeverity. The rivers in Germany were frozen, early in December, and there was deep ſnow at Bologna in Italy in October. But in England, the winter was not ſevere—an inſtance which is ſometimes obſerved in both hemiſpheres, that cold and falls of ſnow run in veins.*

An. Regiſter, 1775. 87. and 1774. 173.

In 1775 happened a great eruption of fire from a volcano in Guatimala. An. Reg. 136. The ſummer was remarkable for thunder and lightning.

A halo and mock ſuns were obſerved in England, and a meteor in America. In Sweden and England, the ſummer was dry. In Holland happened a great tempeſt and high tide, Nov. 14th.

An. Regiſter, 172.

In 1775 prevailed in England epidemic catarrh, preceded by mild ſerene weather.

In America prevailed cynanche maligna, with conſiderable mortality. It ſeems to have invaded all the northern parts of America, and in many places it continued to be current with dyſentery for three years. This was the caſe in Middletown on Connecticut river. In other places, it diſappeared in the winter following.

M. S. letter from Dr. Betts.
Regiſters of the firſt ſociety in Middletown.

This peſtilential period ſeems to have commenced with the great agitations of the elements in 1769 and 70, and to have been firſt diſplayed in the drouth and famin in India, the plague in Turkey, and the inſects and diſtempers among cattle in Europe and America; to which may be added anginas. The proceſs was marked by a comet, volcanic eruptions, earthquakes and tempeſts, with meaſles, influenza and angina, and a ſeries of moſt fatal dyſentery cloſed the period.

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* A remarkable inſtance has happened, the laſt winter, 1798-9—the weather being very cold, with immenſe quantities of ſnow from the Atlantic to the mountains, but very mild in Canada and the weſtern country, until the cloſe of winter.

In 1775 an eruption of water took place from mount Etna, and Lipari, a neighboring iſland, diſcharged fire.

Encyclopedia, art. Volcano and Lipari.

In this year began or very much increaſed the mildew of oats in Montquitter in Scotland. About the beginning or middle of Auguſt, the plant aſſumes a fiery red color; then black ſpots burſt forth near the roots, and aſcend to the fibers that ſupport the ear; circulation then ceaſes, and the grain advances no further in maturity. Sometimes it yields a little fruit; at other times none. This diſeaſe of the oats ſtill continues to be very injurious to the pariſh; but in 1789, a year of unuſual commotion in the elements in the north of Europe, as will hereafter be related, it ſpread to a greater extent than was ever before known. This phenomenon has been a ſubject of great reſearch among farmers and philoſophic men; but no ſatisfactory cauſe has yet been diſcovered.

Sinclair's Stat. Acc. of Scotland, vol. 6. 131.

It is remarkable that the prim in America began to decay and periſh about this period; and near the ſame time, the wheat inſect firſt appeared on Long-Iſland.

I would juſt obſerve that the diſeaſe among the oats, and the death of the prim, with the wheat inſect, may be new phenomena in the natural world; or certain revolutions which unuſual cauſes may have induced in animal and vegetable life.

About this time, for the year is not recollected, there was an eruption of fire at Derby, in Connecticut, a few rods from Naugatuck river; the only inſtance ever known in that place. It happened on a ſteep bank where it made a large excavation in the earth, throwing trees and ſtones to ſome diſtance. A light was ſeen on the ſpot in the evening before the exploſion. It was accompanied with a loud report, and ſome foſſil ſubſtances were ejected, which were analized by Dr. Monſon of New-Haven, and found to contain arſenic and ſulphur.

In 1775 alſo periſhed a bed of excellent oyſters in the harbor of Wellfleet, on Cape-Cod, twenty leagues ſouth of Boſton. Theſe oyſters had been in great plenty, and furniſhed the inhabitants with no ſmall portion of food; but in this year from ſome unknown cauſe, they ſickened and periſhed, and have never ſince grown in that harbor.

Hiſtorical Collections, vol. 3. 119.

During this ſickly period alſo, the oyſters on the ſhores of Connecticut were in an unhealthy ſtate, and ſometimes excited vomiting in thoſe who ate of them.

It is remarkable alſo that in 1776 the lobſters in the vicinity of York-Iſland, all diſappeared. This event has generally been aſcribed to the firing of cannon in the ſummer of that year. But the place where they lived being many miles from the Britiſh ſhipping, this explanation is not ſatisfactory. It is more probable that they periſhed, or abandoned the ground, on account of the bad ſtate of their element.

The winter in 1776 was ſevere in Europe. The cold exceeded that of 1740. In Denmark the ſound was frozen and croſſed on ſledges. The Thames was alſo frozen.

An. Regiſter, 1776. 114.

The ſummer of 1776 in America was hot and in the northern ſtates rainy. The dyſentery was prevalent in all parts of the country, and was terribly fatal to the American troops in New-York and at Ticonderoga. I was at Mount Independence in October, and witneſs to the ravages of the diſeaſe. Of thirteen thouſand troops, it was ſaid that one half were unfit for duty.

It has been cuſtomary to aſcribe the prevalence of this mortal diſeaſe to infection ſpread by the ſoldiers who returned home from the armies. It is certain that the diſeaſe was thus introduced into particular families ; but infection was the ſmalleſt among the cauſes of the epidemic. In moſt places, it originated without any communication from the army ; and I was a witneſs of ſuch inſtances. The diſeaſe was the effect of a particular ſtate of the atmoſphere, aided by the ſeaſons.

To prove how unfounded is the opinion that the diſeaſe originated in the army alone, and ſpread from that as from a focus, it will be ſufficient to mention two facts. The firſt is, that this epidemic commenced in 1773, *two years before the war*, in which year it was more malignant and fatal, in ſome places, than in any ſubſequent year. Witneſs New-Haven, Eaſt-Haven and Salem in Maſſachuſetts.

In 1775 a remarkable fact occurred. About one hundred men belonging to Danbury, in Connecticut, went to join the army on Lake Champlain; they performed their duty and all returned in good health. While they were abſent, the dyſentery invaded the town and carried off more than one hundred of the inhabitants. In this inſtance, not a ſoldier returned from the army, until the diſeaſe had ſubſided.

The ſecond fact is, that the ſame diſeaſe has before raged generally in this country, with all its horrors, in time of peace. Witneſs the epidemic at Georgetown in Maryland in 1793, at Derby in 1794 and at New-Haven in 1795. In an eſpecial manner, I ought to mention the diſtreſſing dyſentery, between 1749 and 1753, a time of profound peace, when not a ſoldier was ſeen in the country; a period when the diſeaſe was as mortal and as general, as between 1773 and 1777. A like epidemic prevailed in many countries in Europe at the ſame time.

I have alſo taken pains to enquire of phyſicians in the country, as to the propagation of this diſeaſe from the army, and am informed that the diſeaſe was as fatal in villages where no intercourſe was had with the troops, as where there was intercourſe.

The acquieſcence of all deſcriptions of men, learned and unlearned, in the opinion that epidemic diſeaſes are to be aſcribed ſolely to infection or ſpecific contagion, has proved extremely injurious to philoſophy and to medicin.* The diſeaſe is infectious, but it originates in any place, in particular ſeaſons, whether in peace or war; and ends at the command of the elements and ſeaſons. It ceaſed at the cloſe of 1777 in the army as well as country, and without any effort which had not been made in preceding years. It may be obſerved further that the dyſentery was and always is, moſt prevalent among old people and children who have leaſt intercourſe with the ſick, eſpecially in the country, where no artificial cauſes of diſeaſe exiſt.

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* A man in my father's neighborhood, was drafted to perform a tour of military duty at New-York, during the revolution-war. He was ſo much terrified by the apprehenſion of *catching* the dyſentery in the army, that he hired another man as a ſubſtitute. The latter went to New-York, performed the duty and returned in health. The drafted man remained at home, was ſeized with the diſtemper in a few weeks after, and died.

In 1777 there was a ſmall earthquake in the interior of England, and the London bill of mortality was higher than uſual. A volcano in Ferro diſcharged diſcolered water, but no lava. The meaſles appeared in ſome parts of America, the ſame year.

The ſummer of 1778 was exceſſively hot in America, and fevers of a typhus kind were frequent. In Philadelphia an infectious bilious fever marked the ſummer and autumn after the Britiſh army left the city. Ruſh, vol. 3. 162. In general however the year was more healthy than the preceding ſummers.

In 1778 the plague was ſevere in Conſtantinople. It was preceded by a great earthquake at Smyrna. An. Reg. 1778. In the ſame year an epidemic angina was mortal at Mancheſter in England.

In the beginning of the winter ſucceeding 1778, there occurred ſome cold weather; but the latter part was the mildeſt ever known. In February 1779, many people along the river Connecticut plowed their fields; and in Pennſylvania the peach bloſſomed. The ſummer ſucceeding was one of the healthieſt ever known in America.

In Auguſt 1779 happened a moſt tremendous eruption of Veſuvius; and about the ſame time, the ſhips of Capt. Cook, then in a high northern latitude between Kamſchatka and America, were covered with aſhes which were ſuppoſed to be diſcharged from a volcano on the neighboring continent. In the ſucceeding winter, Tauris, the capital of Perſia, was laid in ruins by an earthquake.

See Encyclopedia, art. Veſuvius, Cook's voyage, 1779.

The winter following theſe eruptions and commotions was, in America, the ſevereſt that had been known ſince 1741. From Nov. 25th to the middle of March, the cold was ſevere and almoſt uninterrupted. The following was the ſtate of the mercury in January by Farenheit's ſcale—at Hartford in Connecticut, lat. 41. 44.

AT SUNRISE.

January, 1—— 2 deg.
2—— 7 below 0
3——14
4——16
5—— 6
6——10
7—— 9
8—— 1 below 0
9—— 5
10——19
11——26
12——11
13—— 8
14—— 9
15——15
16——10
17——17
18——12
19——13 below 0
20—— 5
21—— 6 below 0
22—— 5
23—— 9 below 0
24—— 6
25——16 below 0
26—— 6 below 0
27—— 2 below 0
28—— 8 below 0
29——20 below 0
30——15
31—— 4 below 0
February, 1—— 2
2—— 3
3—— 0
4——15
5—— 8 below 0

Mean temperature in January at ſunriſe 4 deg.—almoſt 20 degrees below the temperature of the ſame month in ordinary winters.

See Connecticut Courant, January 1780.

Not only all the rivers, but the harbors and bays in the United States, as far ſouthward as Virginia, were faſt bound with ice. Loaded ſleds paſſed from Staten-Iſland to New-York; the ſound between Long-Iſland and the main land was frozen into a ſolid highway, where it is ſeveral miles in breadth. Cheſapeek bay at Annapolis, where the breadth is 5 and an half miles, ſuſtained alſo loaded carriages.—The birds that winter in this climate, as robbins and quails almoſt all periſhed; and in the ſucceeding ſpring, a few ſolitary warblers only were heard in our groves.

The ſnow was nearly four feet deep, in Atlantic America, for at leaſt three months. The winter was ſevere in Europe alſo; and on the 14th of January, the mercury at Glaſgow fell to 46 deg. below 0.

On the 19th of May 1780 occurred a day of ſingular darkneſs, in New-England, and it was perceived, in a ſmaller degree, as far ſouth as New-Jerſey. The heavens were obſcured with a vapor or cloud of a yellow color or faint red. The cloud which occaſioned the principal darkneſs, paſſed over Connecticut about the hours of 9 and 10, and continued till after twelve. In the greateſt obſcuration, a candle was neceſſary to enable perſons to read. For ſome days before, the atmoſphere was filled with vapor.

Mem. Amer. Acad. vol. 1. 234.

On the ſame day that this lurid vapor overſpread ſeveral hundred miles of country in America, Etna began to diſcharge lava from a new mouth, between two and three miles from its crater. The lava divided into three ſtreams of a quarter of a mile in breadth, and in a few days ran fourteen miles. Violent earthquakes accompanied and followed the eruption. The coincidence of theſe events, in point of time, well deſerves notice. The great diſcharges from Veſuvius and a volcano in the Arctic regions in 1779, the terrible earthquakes, ſevere cold and eruptions of fire that followed, may perhaps lead us to a rational ſolution of the phenomenon of the *dark day*—which has not hitherto been explained.

Courant, Oct. 24, 1780.

The plague broke out in Smyrna in the ſpring of 1780 but I have no account of its progreſs.

The ſpring was cool and dry, and catarrhous complaints were prevalent among children, ſays Dr. Ruſh, vol. 1. 123. The ſummer following was hot,* and a bilious remittent was epidemic in Philadelphia, accompanied with ſuch acute pains in the back, hips and neck, as to obtain the name of the *break-bone-fever*.

In the midſt of ſummer, but I do not recollect the preciſe time, appeared the moſt ſingular halo about the ſun which I ever beheld. I wrote a particular deſcription of it, at the time, which is miſlaid, and therefore I ſhall not attempt to deſcribe it from recollection.—Haloes are among the moſt certain forerunners of tempeſtuous weather.

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* At Hartford, July 8th, the Thermometer at half after 11 A M. was at 102, at 2 P. M. 99 and an half, two degrees higher than it had been ſince 1772.

On the 2d of October the leeward Weſt-India iſlands experienced a moſt dreadful hurricane; and on the 11th the windward iſlands were almoſt laid waſte by a ſimilar calamity. Barbadoes which is leaſt ſubject to theſe tempeſts, was laid deſolate; and it was eſtimated that 6000 ſouls periſhed. Houſes, plantation-buildings, wharves, piers, ſhipping were all overwhelmed in one general ruin. It is ſaid that, during the tempeſt, ſome of the iſlands experienced an earthquake. Courant, Dec. 12, 1780. Jan. 9, 1781 and Jan. 23, 1781. As hurricanes are occaſioned by diſcharges of electricity, ſome trembling of the earth almoſt always attends thoſe which are violent, and flaſhes of fire are viſible. Indeed the atmoſphere appears to be a ſheet of fire. Similar diſcharges of electricity attended the tempeſtuous earthquake that deſtroyed Nicomedia in 358—that which defeated Julian's attempt to rebuild Jeruſalem in 362—the hail-ſtorm in Egypt, in the time of Moſes—and that which happened at Mantua in 1785, to be hereafter related.

The canker-worm made extenſive ravages in this period; but I cannot ſtate their riſe and decline in different parts of the country. The winter of 1780-81 exhibited nothing worthy of particular notice.

In the ſpring of 1781 prevailed the influenza, or epidemic catarrh. It began with a ſevere pain in the head, proſtration of ſtrength, coldneſs and chills, the pulſe not quick nor tenſe. The pain in the head laſted about twenty-four hours, and was ſucceeded by a pain in the ſide, not pointed nor acute, extending to the hips, accompanied with a ſoreneſs, and reſembling a rheumatic pain. The cough was troubleſome, full, and the matter diſcharged of the glandular kind, not well concocted. Reſpiration was difficult, and a conſiderable defluxion on the lungs. In a few caſes, the diſorder terminated in 7 or 8 days; but uſually not till the 13th or 14th; altho the patient was ſeldom confined to his bed. The diſeaſe left a ſoreneſs and weakneſs in the ſide, which continued after the ſtrength was recovered. Veneſection had little effect on the pain in the ſide. Epiſpaſtrics applied to the part gave relief. The diſorder was ſeldom fatal, but its effect were very viſible in the multiplied caſes of pulmonary conſumption, in the following year.

M. S. letter from Dr. Tufts.

In the ſummer following no particular phenomena occurred; the elements were in their uſual ſtate, ſo far as my information extends; and in general the country enjoyed good health. A malignant fever prevailed, in ſome degree, in New-York, but excited no great alarm.

One year after this influenza in America, the ſame diſeaſe pervaded the eaſtern hemiſphere. Its progreſs was from Siberia and Tartary weſtward; and it reached Europe in April and May 1782: I have no account of its courſe in America, but it ſeems to be probable, that it took its direction from America weſtward, and paſſing the Pacific in high northern latitudes, invaded Aſia and Europe from the eaſt. This muſt have been the caſe, if the epidemic in Europe was a continuation of that in America. For an account of this epidemic, ſee the publications of that year.

In 1782 happened conſiderable earthquakes in Calabria, during which the mercury in the barometer in Scotland ſunk within the tenth of an inch of the bottom of the ſcale, and the waters in many locks in the highlands were greatly agitated.

Sinclair's Statiſtical account of Scotland, vol. 6. 622.

In Britain the ſummer was univerſally wet and cold, and crops failed, in conſequence of which a diſtreſſing dearth afflicted Scotland in the following year.

In America alſo the ſummer was cool. Two or three tornadoes happened in Vermont and New-Hampſhire, with deluging rains, and in one place hail of enormous ſize—the gazette accounts ſay, pieces of ice were found of 6 inches in length.

The latter part of ſummer was exceſſively dry. In New-Jerſey, a cedar ſwamp of 20 miles in length and 8 in breadth, taking fire by accident, was totally conſumed. The fire penetrated among the roots to the depth of 6 feet.—Corn, graſs, and the very foreſts withered. The air was loaded with a thick vapor, for ſome days in September.*

Mem. Am. Acad. vol. 1. 356. Courant, Oct. 8, 1782.

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* The reader will judge how far this extreme evaporation and dryneſs, indicate the action of the internal fires or electricity which produced the tremendous diſcharges from Heckla in the following year.

In autumn happened the violent tempeſt which diſperſed the Engliſh fleet from the Weſt-Indies, and in which two or three of the French ſhips, taken by Admiral Rodney, foundered.

The winter of 1782-3 was more variable than uſual; and extreme drouth cut ſhort the crops in the Weſt-Indies.

Courant, May 20, 1783. Mem. Amer. Acad. vol. 1. 360.

On the morning of the 5th of February 1783, a thick vapor or fog was obſerved over the iſland of Sicily, indicating the agitation of the element of fire or electricity; and about 12 o'clock, a violent ſhock of earthquake laid many houſes in ruins. This was but a prelude to more terrible calamities; for about ſeven o'clock P. M. a tremendous ſhock laid in ruins the greateſt part of Meſſina, Calabria and many towns and villages. From 30 to 40,000 perſons periſhed in the ruins. On ſubſequent days, many ſhocks were felt, but of leſs violence. During the convulſions on the 5th, flames were ſeen to iſſue from the neighboring ſea.

Courant, June 3, 1783, &c.

On the evening of the 10th, a denſe fog or vapor ſpread over ſome parts of New-England, having the ſmell of burnt leaves. The ground, at the ſame time, was covered with ſnow.

Mem. Amer. Acad. vol. 1. 361.

About this time, for the gazette accounts are not particular as to the month, commenced a moſt diſtreſſing famin in the Carnatic, which afterwards extended to moſt of the European ſettlements in the Eaſt-Indies. At Madras hundreds of the natives periſhed daily, and the ſtreets were filled with dead bodies. The cauſe was a four years drouth; for during the approach of comets, and the action of ſubterranean fire in other parts of the world, that country is ſubject to exceſſive drouth, as happened in 1769 and 70.

Courant, June 24, 1783, and July 1, Dec. 5, 1785.

In the evening of the 29th of March the heavens were illuminated with a moſt ſplendid lumen boreale.

The ſummer of 1783 was variable in the northern parts of America; in England, it was hot.

In June commenced a moſt formidable diſcharge of lava from Mount Heckla in Iceland, which continued till the middle of

Auguſt. The country around the mountain was covered with burning fluid, to the extent of 40 miles, and in ſome places, to the depth of 40 feet. The lava ſpread over 3600 ſquare miles.

Previous to this eruption, all the ſprings and ſtreams of water in the neighborhood had been dried up; a ſure forerunner of the diſcharge of fire; and for ſome months before the eruption, the atmoſphere over the iſland was filled with a dark, bluiſh, ſulphurous vapor or cloud, which was ſtationary in calm weather, but which was ſometimes diſperſed by winds, and ſpread over Europe. See Encyclopedia, article Iceland. During this eruption, a new iſland was thrown up, at ſome diſtance from Iceland. On the 18th of Auguſt, ſoon *after* the eruption of Heckla ceaſed, an immenſe meteor or globe of fire ſhot through the heavens, from north to ſouth, paſſing the Orkneys and the iſland of Great-Britain, and burſting with a loud report.

Encyclop. art. Iceland. Sinclair's Scot. vol. 6. 623.

A part of the ſummer was exceſſively hot in America. No leſs than thirty perſons in Philadelphia, killed themſelves by drinking cold water. Many putrid fevers were the conſequence of the heat in various parts of the country; as alſo tornadoes and thunder guſts of unuſual violence, with hail of uncommon ſize, in all parts of America. Rarely indeed has ſo much injury been done by hail in the ſame ſpace of time.

On the 31ſt of May a large meteor or fiery globe was ſeen at Richmond in Virginia, ſhooting from north to ſouth. It burſt with a heavy report. It will be remarked that this meteor occurred about *two weeks before* the eruption of fire from Heckla, but while the fires or electrical cauſes were in agitation, as appears from the cloud of vapor, that was ſuſpended over the iſland.

Courant, Sept. 2, and June 24, 1783, and Aug. 5, and 12.

During the immenſe diſcharges of fire and lava from Heckla, all parts of Europe, Great-Britain, Italy, Sicily, France and even the Alps were overſpread with a hazineſs in the atmoſphere. This cauſed univerſal conſternation, as a ſimilar appearance had preceded the earthquake in Sicily on the 5th of February. The churches were crouded with ſupplicants. The French aſtronomer La Lande attempted to quiet the popular fears, by aſcribing the phenomenon to a ſuperabundance of watery particles in the earth, from the moiſture of the preceding year, which were then exhaled by the ſummer heats. But this ſolution is not ſatisfactory. It was more probably the ſmoke from Heckla, wafted by northerly winds and diſperſed over Europe, in an attenuated form.

Courant, Oct. 28, 1783, and Nov. 11th, and 25th.
Franklin's Meteorol. Obſerv. Muſeum, vol. 1. 473.

It is ſtill more probable that this vapor was the effect of inſenſible diſcharges of electricity, combined with aerial ſubſtances; as in Sicily on the 5th and in America on the 10th of February.

In October occurred tremendous gales of wind and high tides which did no ſmall damage in the ſeaports of the United States, The firſt, on the 15th and 16th, occaſioned the higheſt water at New-Haven, which had been known in 40 years. Many other tempeſts occurred in September and October; and from Vermont to Georgia, the gazettes were filled with accounts of diſaſters from the violence of the winds and rains.

Courant, October 21, 1783.

On the 29th of November, a conſiderable ſhock of earthquake was felt in all the northern ſtates; and New-York experienced two or three ſhocks in the morning of the next day.

Some of the Weſt-India iſlands were ſeverely ſhaken, about the ſame time, and eſpecially on the 4th of December.

Courant, Dec. 16, 1783. March 9, 1784.

In autumn 1783 ſome parts of Europe were deluged with continual rains, and at Rome 5 or 6000 children died of the ſmall-pox. About Grenoble raged an epidemic fever.

A diſtemper among the cattle in Derby in England, occaſioned no ſmall alarm, and a royal proclamation was iſſued enjoining certain precautions to prevent the propagation of the diſeaſe.

Cotemporary with theſe convulſions of nature, was a moſt deſolating plague in Egypt, the Grecian Iſles, Dalmatia, Conſtantinople, Smyrna and in the Crimea. It is not poſſible, with the *general* accounts given of ſuch an epidemic, in the public prints, to ſtate, with any preciſion, its origin and progreſs in the eaſt. It is mentioned to have appeared in Smyrna, in the ſpring of 1783, and it certainly raged in Conſtantinople, and many other parts of Turkey in the following ſummer, as well as on the north of the Euxine.

Courant, Jan. 17, 1784. July 6. Sept. 21, and 28, 1784.

In Egypt the ſame diſeaſe committed moſt terrible ravages in 1783-4 and 5. It began in November 1783. To this calamity was added a ſevere famin; the inundation of the Nile, in the ſummer of that year, having proved inſufficient. So ſevere was the plague, that in the winter after 1783, fifteen hundred dead bodies were carried out of Cairo in a day; and the plague and famin of that and the ſucceeding year, was ſuppoſed to carry off one ſixth of the inhabitants of Egypt. See Volney's Travels, vol. 1. 192 and 3, and Courant, Oct. 28, 1783, and Oct. 17, 1785, in which it is ſaid that in Cairo 3000 periſhed in a day in April, 1785.

We have then an exact general view of the phenomena which introduce and accompany peſtilence in Europe, Africa and Aſia—terrible earthquakes and eruptions of volcanoes; exceſſive drouth in America, India and Egypt, failure of crops and famin—meteors, great heat and deluges of rain, in other countries. Let us now ſee what followed theſe abovementioned agitations of the elements, in our country.

See Courant, April 27, 1784, and Jan. 27, 1784, and June 8.

In Auguſt 1783, the ſcarlatina appeared in Philadelphia and in September it became epidemic. It appeared about the ſame time in Salem, in Maſſachuſetts. It was in Charleſton, South-Carolina in 1784, in which year, it appeared in the interior of the northern ſtates, as in Vermont and New-Hampſhire, and in Middletown, on Connecticut river. It continued to prevail about five years; but was not ſevere in general and many towns wholly eſcaped its attacks.

Ruſh, vol. 1. 141. Muſeum, vol. 2. 562.
Mem. Amer. Acad. vol. 1. 369.
Belknap's Hiſt. New-Hampſhire, vol. 2. 121.
Regiſter of deaths at Middletown.

In 1787 the cynanche maligna was epidemic at Northampton, in Maſſachuſetts.

M. S. letter from the Rev. Mr. Williams.

The meaſles appeared in America in 1783; at Salem as early as May. I find it in all parts of America, in that year, but cannot trace the progreſs of the epidemic.

During this period neither dyſentery nor peſtilential autumnal fevers made any conſiderable ravages in America, as far as I can learn; except at Fell's-Point in Baltimore, where the bilious peſtilential fever occaſioned a mortality in 1785. Many ſporadic caſes of a ſimilar fever appeared in various parts of the country, and almoſt a whole family in New-Jerſey periſhed by it in the autumn of that year. Fortunately however the conſtitution of the elements was corrected, without producing its moſt fatal effects. Even the ſcarlet fever, with the exception of a few places, was leſs malignant than it has been in the laſt period.

This peſtilential conſtitution was felt alſo in the north of Europe. The ſcarlatina broke out in Edinburgh in the winter of 1782-3, a few months before it did in America; but of its progreſs I have no account. It appears to have been epidemic in London in 1786; ſo that its period was of about the ſame duration as in America. The cotemporaneouſneſs of this ſpecies of diſeaſe in Great-Britain and America, deſerves particular notice.

In December happened a fog in Amſterdam of ſuch denſity as to occaſion complete obſcurity for three hours in the middle of the day. It was not poſſible for perſons to find their way in the ſtreets, and many paſſengers and ſome carriages fell into the canals.

Courant, March 9, 1784.

The ſeverity of the winter ſucceeding theſe phenomena, both in Europe and America, correſponded with their extraordinary number and violence. The weather was leſs uniformly cold than in 1780, but the froſt, in ſome parts of the winter was moſt intenſe. The following was the ſtate of Farenheit's thermometer, at Hartford.

February 10th, 1784,	19	deg. below 0.
11	12	do.
12	13	do.
13	19	do.
14	20	do.

February 15	12	deg. below 0.
16	16	do.
17	16	do.

On the 20th of January was diſcovered a comet in Piſces, which was involved in a luminous atmoſphere. It was viſible about four weeks.

The ſevere cold commenced early; the Delaware at Philadelphia was cloſed at the beginning of December, and continued bound with ice till the middle of March; notwithſtanding a relaxation of cold and a heavy rain in January. The gazettes ſtate that ſuch intenſe cold had not been known in that city, ſince 1750-51.—The Miſſiſippi was reported to be covered with ice, as far ſouth as New-Orleans. At the breaking up of winter, the thaw was ſudden, and immenſe bodies of ice, floating down the rivers, which were greatly ſwelled, ſpread ruin along the low lands on their banks. Great damage was ſuſtained on the banks of the Schuylkill, Suſquehanna, Potomack and James rivers.

Courant, May 11, 1784. Feb. 24. March 30. April 11.

In Europe, the winter was no leſs ſevere—an inſtance in which a ſeverely cold winter in Europe coincided in time, with the ſame in America. It may be remarked alſo that this winter was juſt one century after the coincidence of like events; the winter of 1683-4 being equally ſevere in both hemiſpheres.

In 1783-4 the river Liffey in Ireland, the Thames in England, and all the rivers in the interior of Holland, were covered with ſolid ice. In Holland, the ice gave way about the firſt of March, and the rivers being greatly ſwelled, the adjacent country was inundated, with immenſe loſs of lives and property. The river Waal, near Nimeguen, broke through its dikes and overwhelmed 34 villages. The Rhine from Cologne and Manheim, exhibited ſimilar ſcenes of devaſtation.

Courant, April 27, 1784, and May 18.

In January a terrible tempeſt ſpread deſolation along the coaſt of France from Rochelle to Bourdeaux; veſſels at ſea ſhipwrecked, and houſes on land blown down. This happened on the night of the 17th. Its violence extended along the coaſt of Spain and Portugal. An earthquake accompanied this hurricane. The coaſt of Italy did not eſcape, and ſo high was the ſwell of the ocean, that fiſh were lodged on the houſes in Syracuſe.

Courant, May 18, 1784, and June 1.

This remarkable tempeſt happened juſt before the appearance of the comet.

The ſpring was wet and cold ; and repeated ſnows fell in April.

The heat of ſome part of the ſucceeding ſummer in America was extreme. The following obſervations were made at Hartford.

See Courant, June 29.

June 24th	at 2 P. M.	97 deg. by Farenheit.
25	2 P. M.	96
26	at ſunriſe,	80
	at 10 A. M.	96
	at 2 P. M.	100
	at 3 P. M.	101
	at 4 P. M.	100
	at ſunſet,	91
	at 10 P. M.	80
27	at ſunriſe,	82
	at 7 A. M.	91

This extreme heat, as uſual, produced moſt violent hurricanes or thunder guſts, with hail of unuſual ſize. In May, pieces of ice fell in South-Carolina of nine inches in circumference. On the 17th of Auguſt the ſouthern part of Connecticut was ſwept by a tornado, which levelled trees and buildings and did great injury. The beginning of ſummer was very dry ; but frequent ſhowers afterwards refreſhed the earth, and good crops ſucceeded.

Courant, Auguſt 10, 1784. Auguſt 24 and 31. See alſo Appendix to a Sermon preached at Hartford on the death of Iſrael Seymour, who was killed by lightning.

A great eruption of Veſuvius happened on the 10th of May. Sickneſs prevailed in Leghorn and other parts of Europe. The plague raged this year alſo at Smyrna, Conſtantinople and in Dalmatia. Spolatro was nearly diſpeopled. The heat in Europe was great and Hungary was overrun by locuſts, which devoured the fields of graſs and corn. A ſevere earthquake at the ſame time, ſhook the country of Armenia, and its vicinity, and a town was demoliſhed with the loſs of 6000 inhabitants, on the 21ſt of July. The plague raged alſo in the regency of Tunis on the African coaſt.

Courant, Aug. 31. Supplement to do. Nov. 9.

On the 30th of July a tremendous hurricane laid waſte a conſiderable part of Jamaica, ſweeping away buildings, canes, fruit-trees and overwhelming all the ſhipping in the harbors.

Courant, Sept. 28, 1784, and Oct. 26.

In October, according to the public prints, Barbadoes was ſeverely ſhaken by an earthquake.

On the 25th of November was a very violent tempeſt from the N. E. and S. E. by which means, a moſt extraordinary tide was brot into our harbors from the St. Lawrence to New-York, and probably further to the ſouth. Great injury was ſuſtained by loſs of ſhipping, and of property ſtored near the wharves.

Courant, Dec. 7, 1784.

The great rains ſwelled Connecticut river to the height of uſual ſpring floods.

A meteor was ſeen in New-England on the evening of December 13, 1784, paſſing rapidly from ſouth-eaſt to north-weſt, and burſting with a loud report.

The winter following exhibited nothing very worthy of remark. In Europe it was colder than uſual, and in America, it produced great ſnows, the melting of which in the ſpring ſwelled Connecticut river to an unuſual height.

On the 13th of March 1785, there was an eruption of fire in the river Majuro, in the province of Palermo, in Sicily, which occaſioned a large chaſm in the earth.

Courant, July 4, 1785.

In America canine madneſs began to rage and ſpread in all parts of the northern ſtates. The gazettes of 1785 abound with accounts of the dreadful effects of this ſingular diſeaſe. It will be remarked that epidemic madneſs of dogs is one of that ſeries of diſeaſes which belong to every peſtilential period. Whenever the human race are generally afflicted with epidemics, the canine ſpecies rarely eſcape the effects of the general principle; and not unfrequently foxes, wolves and other wild animals, experience its malignant effects, and run mad. In 1785, the ſcarlatina anginoſa was prevalent in the northern ſtates. This was in the midſt of the period, and almoſt every gazette announced ſome new caſe of hydrophobia.

See Courant, Aug. 1, 1785. Aug. 8 and 29.

The wheat-inſect, which has been ignorantly and improperly named the Heſſian Fly, committed uncommon ravages in this year. The preciſe time when this inſect originated, is not aſcertained, probably about the year 1776, or a year or two earlier. Little notice was taken of it, for two or three years. In 1780, Mr. Underhill of Long Iſland loſt his wheat crops by the inſect; and in ſubſequent years, it penetrated into New-Jerſey, travelling, according to common opinion, about 15 or 20 miles in a year. In 1785, it occaſioned unuſual deſtruction of wheat —and ſuch was the alarm in England, for fear it ſhould prove *infectious*, and be introduced into that country, that the King iſſued a proclamation dated June 25, 1788, prohibiting the importation of American wheat.—This event excited no ſmall uneaſineſs in America, eſpecially in the ſtates, whoſe ſtaple is wheat. Whereupon the Supreme Executive Council of Pennſylvania requeſted the opinion of the Agricultural Society, as to the manner by which that inſect is propagated. To this requeſt, the Society returned for anſwer, their decided opinion that it is the plant alone which is injured by the inſect; that the grain is ſound and good, and that the inſect is not propagated by ſowing wheat which grew on fields infected with it.

See Muſeum, vol. 4. 244. Am. Magazine.

The prohibition by the King and Council of Great-Britain was deemed a judicious precaution; but was the fruit of an error that pervades the world, reſpecting the powers of *infection* and *contagion*. The opinion of the Agricultural Society is well founded, but it remains for time and the force of truth to convince the people of Philadelphia, that the yellow fever can no more be tranſplanted and rendered epidemic by infection, than the wheat-inſect. Both are *diſeaſes*, originating where they have a ſuitable aliment, and ceaſing to exiſt, when that aliment fails.

The prohibition of the Britiſh government was repealed the next year; under the apprehenſion of a dearth.

The ſummer of 1785 was exceſſively dry in France and England and fevers very prevalent in France. In Holland ſuch a drouth could not be recollected by the oldeſt man living. The canals, rivers and wells were almoſt totally exhauſted. In the firſt part of ſummer, there was not a drop of rain for three or four months, and cattle were fed upon the leaves of the trees. The drouth was nearly as ſevere in the Weſt-Indies.

Courant, Auguſt 8, 1785, and 29th—alſo Sept. 12 and 19.

In North-Carolina, the fields were overrun with bugs, which threatened a deſtruction of the grain.

Courant, Auguſt 29, 1785.

The ſummer contained ſome exceſſively hot days in America, as well as in Europe.

Courant, Sept. 5.

On the 25th of Auguſt happened in the Weſt-Indies one of the moſt dreadful hurricanes ever known, and equal to that of 1772 or that of 1780. This tempeſt was preceded by very ſultry heat, and the phenomenon called *looming*, by which diſtant objects at ſea appear to be raiſed higher or brot nearer than at other times. I have often noticed this ſingular effect of the powers of refraction in the air, previous to ſtorms, of which it is the uſual forerunner. Guadaloupe, St. Croix and the other windward iſlands were laid deſolate by this tempeſt. On the 27th of Auguſt, the leeward iſlands ſuffered a ſimilar calamity. On the 24th of September, an eaſterly ſtorm brought into the rivers in the ſouthern ſtates, as high a tide as ever was known.—Norfolk was inundated, with great loſs.

Sickneſs was very general in many parts of the United States. The ſcarlatina was prevalent, and the gazettes mention a precinct in Ulſter in which died almoſt every child under ſix years of age. Many adults alſo fell victims to this or other maladies.

See Courant, Oct. 3, 1785, and Oct. 10.

On the 9th of Auguſt happened a memorable tempeſt at Mantua, in Italy, and the neighboring country. The wind was a hurricane, and accompanied with rain and hail-ſtones of the weight of 18 ounces. The accounts ſtate that viſible flames iſſued from the earth, and ſcorched people's legs and clothes ; other accounts mention that the fire ran along on the ſurface of the earth. The reader will call to mind the relation of the like fact, in the terrible hail-ſtorm which conſtituted one of the ten plagues of Egypt in the reign of Pharaoh.

Courant, Nov. 28, 1785.

The autumn was uncommonly ſickly in Jamaica. Kingſton was a general hoſpital.

Courant, Jan. 30, 1786.

On the 9th of October there was an uncommon darkneſs in Canada; while the atmoſphere was of a fiery luminous appearance. This was followed by ſqualls of wind and rain, with ſevere thunder.

On the 15th occurred a ſtill greater obſcurity, ſucceeded alſo by lightning, thunder and rain.

On the 16th the morning was calm and foggy. At 10 o'clock aroſe a wind from the eaſt, which partly expelled the fog; and ſoon after, commenced the darkneſs of midnight. The people dined by candle-light. Soon after the darkneſs fell a meteor or fire-ball.

See Mem. Am. Acad. vol. 2, and the Gazettes of that month.
Courant, Dec. 12, 1785.

A ſlighter degree of obſcurity on the 15th extended over New-England: but the 16th was a fair day.

The year 1786 exhibits fewer of the great phenomena of nature, than the preceding year; but it commenced with a degree of cold rarely known in this country. State of the thermometer at Hartford,

Jan.	17	at ſunriſe,	14	deg. below 0.
	18	do.	20	do.
	19	do.	24	do.
		at noon,	0	
		at 2 P. M.	3	above 0.
	20	ſunriſe,	17	below 0.

The froſt of the whole winter was however far leſs ſevere than in 1784. The ſummer following was cool.

One or two violent tempeſts occurred during the ſummer, particularly one on the 23d of Auguſt, which paſſed over Woodſtock, in Connecticut, with fatal violence.

The ſcarlet fever and hydrophobia continued to prevail in this year.

The plague prevailed on the Barbary coaſt; and ſeveral thouſand people in Carthagena and Malaga, in Spain, periſhed with yellow fever.

Town's Travels, vol. 3.

In June 1786 was a ſmart ſhock of earthquake in the north of England. In Auguſt a ſecond ſhock of conſiderable extent. In January 1787 a ſhock was felt in Scotland, on the night preceding which, a piece of ground, near Alloa, on which was a mill, ſuddenly ſunk a foot and a half. The waters of rivers receded and left their channels dry, before the concuſſion.

Sinclair, vol. 6.

The winter of 1786-7 began early and with great ſeverity.—On the 28th of November, the temperature at Hartford was at 10 deg. by Farenheit, through the day. At ſunriſe on the 29th, it was at cypher; and the cold continued to be extreme for two weeks. It did not riſe above the freezing point till the 13th of December. The cold then abated, but the winter, on the whole, was more ſevere than uſual. Courant, Dec. 4, 11 and 18. The winter was alſo ſevere in Europe.

The ſore throat was fatal in ſome parts of the eaſtern ſtates. One man in Newton, Maſſ. loſt three children after 30 hours illneſs.

Courant. Feb. 20, 1786.

The plague continued to prevail on the Barbary coaſt, and in this winter and the ſpring following ſeventeen thouſand inhabitants of Algiers periſhed. It made great havoc alſo in the dominions of Morocco, as it did in Aleppo.

M. S. of Mr. O'Brien. Courant, April 16, 1787 and July 23.

The wheat-inſect continued its ravages in the United States.

Two or three violent tornadoes are recorded to have occurred in the ſummer of 1786—one at Wethersfield, which overſet a houſe and killed ſeveral perſons; and another at Northborough in Maſſachuſetts.

About the cloſe of Auguſt a celeſtial phenomenon of a ſingular kind appeared at Portſmouth, New-Hampſhire. A ſmall light cloud was ſeen, from which iſſued repeated reports, like the burſting of crackers, or an irregular diſcharge of muſquetry—ſuppoſed to be the exploſion of a meteor or ſucceſſion of meteors. The wind was high at north-weſt, with flying clouds.

Courant, Sept. 10, 1787.

A dreadful hurricane almoſt deſtroyed the ſettlements at the bay of Honduras on the 2d of September. The hurricane was followed by fatal diſeaſes.

About the cloſe of 1787 Veſuvius diſcharged a large quantity of lava. In the ſame year was an eruption of Etna, in the month of July.

A moſt extraordinary tempeſt and inundation deſolated the Coromandal coaſt on the 20th of May. Whole towns were overwhelmed, and more than 10,000 people periſhed.

Courant, May 26, 1788, and Aug. 4.

This year was in general healthy in America and in the north of Europe. In ſome towns in New-England prevailed angina, but it was not general.

SECTION VIII.

Hiſtorical view of peſtilential epedemics, from the year 1788 *to* 1798 *incluſive, comprehending the laſt epidemic period in America.*

THE winter of 1787-8 was colder than uſual in America, but not of great ſeverity.

In Europe prevailed epidemic catarrh in 1788. It appeared at Vienna in April—was in Poland and Ruſſia in May—at London in June—and at Paris in Auguſt. In St. Luke's Hoſpital, it began on the 16th of July, and a few caſes occurred till Nov. 10th; but only twenty-five perſons out of 190 were affected; a proof that it has little contagion. Gent. Mag. 1789. 346. The invaſion of this epidemic was leſs ſudden than uſual.

On the 22d of July was a violent tempeſt from the N. E. which occaſioned a very high tide in the Cheſapeek, and no ſmall damage. This is a ſingular occurrence. A north-eaſt gale in June or July on the American coaſt, muſt be attributed to ſome extraordinary cauſe; and perhaps this may be aſcribed to the approach of a comet, which appeared in October and November following. This comet was predicted by Mr. Herſchel, who made previous preparations for examining it.

Courant, Auguſt 11, and 25, and April 28, 1788.

The ſummer was remarkably tempeſtuous. On the 29th of Auguſt, a ſevere gale of wind did great damage in many of our ports. Of 30 ſail of veſſels, in certain rivers and bays of North-Carolina, 26 were deſtroyed. A tempeſt in the beginning of the month had been terribly deſtructive. No one event is more certain, than a vaſt increaſe of tempeſtuous weather during the approach of comets. The tempeſt of the 19th extended over the whole face of the country, penetrating to Vermont, levelling buildings, trees and corn. Many cattle and one child was killed by falling timber and trees. To enumerate the particulars, would fill many pages.

Courant, Sept. 1, 1788, and 8.

It is remarkable that this tempeſt in the United States was but two or three days after a tremendous hurricane among the windward iſlands, which was ſuppoſed to do more injury than the great tempeſt of 1766. At the leeward alſo the ſame calamity befel the iſlands. In Martinico the barometer fell nearly to 27 inches.

Courant, Oct. 27, 1788.

About the ſame time ſimilar diſaſters befel France and England. A tornado of great violence occurred about Paris, in which, the gazettes declare, fell hail-ſtones of 8lb. weight. During a tempeſt in London, a fire ball entered a houſe and ſtruck down two perſons.

Courant, Oct. 27, 1788.

In the Weſt-Indies hurricanes were repeated in September with deſtructive rage.

On the evening of the 17th of October 1788 was ſeen, at various places, in Connecticut and New-York, a meteor or fire ball, whoſe apparent diameter was equal to that of the ſun in the meridian. It paſſed from the eaſtward to the weſtward with amazing rapidity, illuminating the earth, and approaching near the weſtern horizon, it burſt with a heavy report.*

Courant, Oct. 27, 1788.

The comet already mentioned firſt appeared about this time. It roſe about 3 o'clock in the morning in the north-eaſt. A violent north-eaſt gale occurred on the 11th of November.

Courant, Nov. 3 and 17.

This ſummer in America was very rainy; earthquakes happened in Italy and Mexico; and a ſhock was felt in July in the iſle of Man.

Sinclair's Scot. vol. 6. 625.

The thermometer on one day in July roſe to 103 in Columbia College, in New-York; but the general heat of the ſummer was not exceſſive.

Muſeum, vol. 7. 36.

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* This meteor was ſeen at Poughkeepſie, on the Hudſon, nearly in the zenith. In Suſſex county, weſt of Cape Henlopen, it appeared to be about ten degrees above the horizon. Courant, Dec. 8, 1788.

In November 1788 appeared the meaſles in New-York. On its firſt invaſion, it appeared with great malignity. The ſame diſtemper appeared in the northern liberties of Philadelphia, in December; and ſpread till it became epidemic in February and March.

Courant, Nov. 24, 1788, and Ruſh, vol. 2. 234.

The eaſtern parts of Europe were ſickly during the ſummer of 1788. The immenſe armies on foot, in the war between the Auſtrians, Ruſſians and Turks, contributed to increaſe the mortality. It was eſtimated that 80,000 Auſtrians periſhed, moſtly by diſeaſe. The year however was generally healthy.

The winter of 1788-9 was colder than uſual in the United States. On the morning of the 2d of February, the mercury in Farenheit fell to 28 deg. below cypher; 4 degrees lower than had before been obſerved in Hartford. The ſeaſon however was on the whole leſs ſevere than in 1780 and 1784.

Courant, Feb. 2, 1789, and 9th.

In Europe, the winter appears to have been unuſually ſevere. The froſt penetrated to the ſouthern parts of Spain and Portugal; and the rivers in Eſtremadura and Alantejo were covered with ice. The Pyrenees were involved in deep ſnow in March.

Courant, Aug. 3, 1789. Univ. Mag. 1789.

It ſhould have been related under the year 1788, that almoſt all the cod-fiſh taken on the banks of Newfoundland, in that year, were thin and ſickly; when dried, they were of a dark or bluiſh color, little better than ſkeletons, and not well received in foreign markets. This condition of that fiſh was confined to thoſe banks; as the cod taken at other places were in their uſual ſtate.

M. S. letter from Dr. Holyoke.

On the 28th of May 1789, appeared in Connecticut a moſt ſingular halo, of which the public prints contain a particular deſcription. This phenomenon ſeems to indicate the approach of tempeſtuous weather, and was in this inſtance, followed by a heavy wind and rain. But when this appearance is of ſingular brightneſs or extent, it indicates a ſtate of the atmoſphere highly electrified perhaps and certainly tempeſtuous, and ſtorms are numerous and violent. Thus the remarkable hurricanes of

1780 were preceded by as remarkable haloes. The halo of May 28th was preceded by a moſt ſplendid lumen boreale.

The inſtance under conſideration was ſurpriſing and to gloomy minds, awful. A clergyman, ſince dead, wrote a moral eſſay on the occaſion in which he predicted great calamities to happen; and he mentioned other events, of that period, as unuſual numbers of flies, caterpillars, locuſts, and dearth of corn, in confirmation of his opinion that the arm of the Lord was extended in wrath over our land.

Courant, June 8, 1789, and June 15.

It is true that our crops had been thin, in the preceding year, and the northern ſtates, in the ſpring of 1789, experienced a dearth, approaching to famin. In Vermont, people were reduced to the neceſſity of feeding on tad-poles boiled with pea-ſtraw. In one inſtance four potatoes ſold for nine pence. None of the human race were actually ſtarved to death, but a few died of a flux in conſequence of bad diet.* Cattle however periſhed in conſiderable numbers. Such were the gazette accounts of the day. It is certain that a ſimilar ſcarcity had not been experienced in America for many years. Whether the failure of crops and the ſickly ſtate of the cod-fiſh marked a derangement of the elements, let the philoſopher determin.

Courant, June 15, 1789, and June 22.

The ſpring of 1789 was cold and vegetation tardy, beyond what could be recollected by the oldeſt perſons living. Part of the ſummer ſucceeding was exceſſively hot. For nine or ten days ſucceſſively, in Auguſt, the heat was above 90 deg. and in the midſt of the day, it roſe nearly to 100 deg. The mean temperature of the ſummer was however not much above what is uſual. Ruſh, vol. 2. 234. Courant, Aug. 24 and 31. On the 4th of June ice at Wioming was as thick as window glaſs.

Courant, June 22.

The failure of crops in the Carnatic in 1788 occaſioned a ſevere famin, by which thouſands periſhed in the ſucceeding year.

Courant, April 27, and Sept. 28, 1789.

The hydrophobia ſhowed itſelf in America early in 1789.

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* In old ſettlements, there was food enough for man, but the failure of a ſurplus in this country, is a rare event.

A man in Coeyman's precinct, ſtate of New-York, died in July of that dreadful malady, taken as was ſuppoſed, by ſkinning a cow that died of the diſorder in the April preceding.

Courant, Aug. 3, 1789.

In Maryland, the autumn was diſtinguiſhed by an unexampled mortality among horſes.

Courant, Dec. 31, 1789.

In Europe alſo crops had failed, and England, Holland and France apprehended the moſt calamitous effects. In Paris the cry of *bread, bread* was every where heard, and many riots and mobs marked the diſtreſs of the inhabitants.

Courant, Oct. 12, 1789.

The empire of China experienced the ſame calamity, and the people ſuffered indeſcribable diſtreſs from famin and diſeaſe. In Madras died 30,000 people by famin in 1788. Courant, April 27, 1789. In this inſtance, crops failed over the whole earth, in the ſame year.

On the 10th of July a moſt tremendous earthquake convulſed Iceland. Large chaſms were opened in the earth, and ſome mountains were rent aſunder. Several ſhocks happened on ſubſequent days, and a violent ſhock in September is mentioned in the 6th volume of Sinclair's Statiſtical works, 625.

Courant, January 21, 1790.

On the 30th of September occurred a violent earthquake in Tuſcany, by which ſome villages were deſtroyed and ſeveral thouſand lives. On the ſame day, but not at the ſame hour, a ſmall ſhock was felt at Edinburgh. On the 5th of November, a ſhock was felt at Crieff, 50 miles from Edinburgh; and on the 10th and 11th, ſevere ſhocks were felt at other places.

Courant, Dec. 7, 1789. Sinclair, vol. 6. 625.

On the 4th of December arrived at Lieth, Capt. Stewart of the ſhip Brothers, from Archangel in Ruſſia; who informed that on the coaſt of Lapland and Norway, he ſailed many leagues among multitudes of dead haddock floating on the water. He ſpoke ſeveral ſhips which alſo paſſed among them.

Sinclair, vol. 6. 627.

Whether theſe fiſh were killed by an earthquake or a diſcharge of ſubterranean vapor or heat, or died by ſickneſs, is not known.

If they were killed, it would ſeem probable that other fiſh in the ſame ſeas, would have ſhared the ſame fate ; which does not appear to have been the caſe ; for the accounts make no mention of the death of other kinds. And what renders it probable that they died of diſeaſe, and a diſeaſe peculiar to that kind of fiſh, is, that for ſome years after, no haddock came to the markets in Scotland, as before that mortality. That ſpecies appeared to be almoſt extinct ; whereas there is no mention made of a failure of other kinds of fiſh. Careful obſervations and preciſe dates would aſſiſt our reſearches into the cauſes of theſe wonderful phenomena.

In October, Veſuvius was in a ſtate of eruption for ſeveral weeks; and diſcharged ſmall ſtreams of Lava. The plague prevailed at Conſtantinople and Smyrna.

Gent. Mag. 1789.

On the 29th of October from 2 o'clock P. M. to half after 4, Kentucky was enveloped in thick darkneſs, ſo that people were obliged to uſe candles.

Courant, January 14, 1790.

It will be obſerved that this darkneſs, and the beginning of the influenza in America coincide nearly in time with the eruption of Veſuvius, and many earthquakes.

Such univerſal diſorders in the elements never fail to produce epidemic diſeaſes ; and thoſe here related were the heralds of the moſt ſevere period of ſickneſs that has occurred in the United States for 30 years.

The firſt appearance of that ſeries of epidemics to be hereafter deſcribed, ſeems to have been in the meaſles at New-York in November 1788, and at Philadelphia in December following. This diſeaſe became epidemic over the northern ſtates in 1789, but I have not the means of deſcribing its progreſs. I find, in bills of mortality, from various places, deaths by meaſles are mentioned in 1789 and 90.

In autumn 1789 appeared the influenza or epidemic catarrh. The preciſe time and place of its appearance, are not aſcertained. Some accounts ſay, it originated in Canada. But I ſhall confine my obſervations to its progreſs in Atlantic America. It was firſt obſerved about the cloſe of September 1789, in New-York and Philadelphia. Dr. Ruſh informs me, that it was brought to Philadelphia by the members of Congreſs, who returned from New-York, about the firſt of October. Another account, written by one of the faculty in Philadelphia, and publiſhed in the 7th volume of the Muſeum, mentions its firſt appearance there, about the time of the Friends Yearly Meeting, in September. The preciſe time is probably not aſcertainable; the opinion of its propagation by infection is very fallacious, as I know by repeated obſervations. It probably appeared in detached caſes, ſome days before it became a ſubject of obſervation.

Muſeum, vol. 7. 231.

From the middle ſtates, it moved rapidly over the whole country. It appeared in Hartford, where I then reſided, about the middle of October. On the 19th of that month, I left Hartford for Boſton and arrived the next day in good health. I was ſeized with the influenza on the 23d, and by the aid of a diluting regimen, recovered in four days. No perſon who attended me was ſeized with the diſtemper, ſooner than the other inhabitants of that town. I mention this to diſprove the common opinion of its infection; not that I deny it to be in a degree, infectious; altho my own obſervations do not warrant that conceſſion; but I aver that its propagation depends almoſt entirely on the inſenſible qualities of the atmoſphere. Two ladies who left Boſton with me on the ſecond of November, before the diſeaſe had appeared in their family, and before it was a ſubject of converſation, were ſeized with it in Hartford, at the ſame time, that it became epidemic in Boſton, one on the 8th and the other on the 12th.—The diſeaſe had then paſſed Hartford, and there is no evidence of their being expoſed to any perſon infected. This fact ſhows a regular progreſs in the ſtate of air producing the diſeaſe—as perſons leaving Boſton and travelling one hundred and twenty miles diſtance, were effected preciſely at the time the diſeaſe became epidemic in that town.

This diſeaſe pervaded the wilderneſs and ſeized the Indians—it ſpread over the ocean and attacked ſeamen a hundred leagues from land, and as to infection, entirely inſulated—it appeared in the Weſt-Indies nearly at the time it did in the northern ſtates. It overſpread America, from the 15th to the 45th degree of latitude in about 6 or 8 weeks; and how much further it extended, I am not informed.

It ſhould have been mentioned that, in September, anterior to the invaſion of the catarrh, the ſcarlatina anginoſa appeared in Philadelphia; but in October it yielded to the influenza, the controlling epidemic. The ſcarlet fever re-appeared in December, and became epidemic; often blending itſelf with the influenza. It exhibited one predominant feature of the whole ſeries of ſucceeding epidemics, a prevalence of bilious matter, which was often diſcharged by purging and vomiting. This diſeaſe continued to prevail in Philadelphia, and if my information is correct, in ſome parts of New-Jerſey, till the ſpring of 1790. The meaſles occurred in ſome caſes, but was not epidemic.

Muſeum, vol. 7. 120, 175.

It is remarkable that the ſcarlatina anginoſa was cotemporary in Edinburgh with the epidemic meaſles in America in 1789, and nearly ſo, with the death of the haddock on the coaſt of Norway.

It will be obſerved that the ſcarlet fever, tho epidemic in Philadelphia, did not ſpread over the country in 1790. It was little known in the northern ſtates, till two years after—this is among the proofs that this diſeaſe does not depend on infection for its propagation. If infection was its only or principal means of propagation, the fomites exiſted in great abundance, in particular places in 1790, and ſufficient to have ſpread it over the United States. But a diſeaſe however infectious, will not ſpread far in an atmoſphere that will not generate it. Indeed ſcarcely a year paſſes in which ſporadic caſes of ſcarlatina, or anginas of other kinds do not appear in particular places; but they never ſpread without ſome uncommon concurrence of cauſes.

The winter of 1789-90 was one of the mildeſt that is ever known in this country; there being little froſt, except for a few days in February. There fell frequent ſnows and in great abundance; but they were immediately followed by warm ſoutherly winds, and diſſolved.

Early in the ſpring of 1790 we had a ſecond epidemic catarrh. I was attentive to its origin and progreſs. I found it at

Albany in the laſt week in March, and heard of it in Vermont about the ſame time. I returned to Hartford, but altho expoſed repeatedly to its infection on my journey, I was not ſeized earlier than others in Hartford, where the diſeaſe appeared about the middle of April. It ſpread to the ſouthward, arrived at Philadelphia near the cloſe of that month, and diſappeared in that city about the middle of June. In the northern ſtates, as far as my knowledge extends, the diſeaſe was more violent, than in the preceding autumn. Many plethoric perſons of firm habit almoſt ſunk under it; while conſumptive people and hard drinkers fell its victims.

Muſeum, vol. 8. 65.

The ſpring and ſummer of 1790 were moſtly rainy; but otherwiſe ſeaſonable weather. No remarkable epidemics prevailed, except thoſe already deſcribed, but an increaſe of mortality, in ſome places, is viſible in the regiſters of deaths. Severe earthquakes occurred on the African coaſt.

Let it be obſerved that the meaſles appeared in autumn 1788, juſt after great volcanic eruptions, and a moſt tempeſtuous ſummer, when the element of fire appeared to be in univerſal commotion; juſt after the meteor, and during the appearance of the comet.* Let it be obſerved alſo that the harveſt failed, at this time, in China, India, Europe and America, and let any man deny the all-controlling influence of the elements in producing theſe events.

The winter of 1790-91 commenced early and with ſevere weather. The laſt week in November was cold; Connecticut river at Hartford was cloſed with ice on the 9th of December, and not open till the 12th of March. On the whole, the ſeaſon was not of unuſual ſeverity. The ſpring and early part of ſummer were, in moſt parts of the country, very dry, until the middle of June.

On the 15th of January, a conſiderable ſhock of earthquake was experienced at Richmond in Virginia. At the ſame time catarrhs were ſo prevalent in that ſtate and in Pennſylvania, as to excite an apprehenſion of another viſit of the influenza.

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* In 1732 a dark day occurred in Auguſt *preceding* the influenza. In 1789 a darkneſs at Kentucky occurred, *during* the epidemic catarrh.

Inflammatory diſeaſes were very frequent during the winter. In Philadelphia the ſcarlatina anginoſa appeared late in January and was very prevalent in February. In the interior of Carolina it was ſickly, but I have no particulars. The whooping cough prevailed in many parts of the country.

Courant, Jan. 21. 1790. See Muſeum, vol. 9. 65.

In the month of April, ſome fiſhermen at the Narrows, near New-York, caught fourteen thouſand ſhad at a ſingle draft; to ſecure which, it was neceſſary to add ſeveral ſeines, one upon the other. This circumſtance is mentioned, becauſe ſeveral medical authors have related that an extraordinary abundance of fiſh is among the precurſors of peſtilence. It will be noted that the peſtilential fever, which has prevailed for many years paſt, firſt appeared in New-York, in the autumn ſucceeding this ſingular draft of fiſh.

Courant, April 25, 1790.*

On the 16th of May, at half paſt 10 o'clock P. M. in a ſerene, moon-light night, an extenſive earthquake was felt in the northern ſtates. It was preceded, a few ſeconds, by a rattling ſound; its duration was ſhort; its courſe as uſual in America, from N. W. to S. E. No injury was ſuſtained.

Courant, May 23.

On the morning after the earthquake, was obſerved at Middletown in Connecticut, a ſubſtance like honey or butter, covering the graſs and earth for a conſiderable extent. See an account of a ſimilar phenomenon in Ireland under the year 1695.

To theſe phenomena ſucceeded in Connecticut the generation of millions of that ſpecies of black worm, deſcribed under the year 1770. I believe they were far leſs numerous than in 1770; they however appeared in Hartford and in Norwich, and diſappeared at the ſame time. They were very deſtructive to the graſs and corn, but their exiſtence was ſhort; all dying in a few weeks.

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* It may excite ſurpriſe that there ſhould be ſuppoſed a connection between an uncommon abundance of fiſh, and peſtilence. But the theory that reſolves this into the unuſual powers of excitement, is rational. The ſtate of the elements that cauſes peſtilence, always produces unuſual numbers of inſects; and often the human race is more prolific than at other times. See the London Regiſters of births and deaths. Mait. Hiſt. Lond.

A paragraph in a Maryland paper dated June 1, 1791, mentions animals, there called *caterpillars*, but evidently the ſame ſpecies of worm. They are repreſented as marching in legions from place to place, and devouring the graſs.

About the ſame time appeared at Lanſingburg on the Hudſon, a ſpecies of worm that greatly injured the fruit-trees.

Courant, June 25, 1792.

But the moſt extraordinary phenomenon was the exiſtence of the canker-worm, in numbers before unexampled. Whether theſe animals had made their appearance in the preceding year or not, I do not recollect But in 1791 they devoured the orchards over the New-England ſtates; and their ravages were repeated in the two following years. Orchards, ſtanding on ſtiff clay and in low grounds which are wet in ſpring, eſcaped; but on every ſpecies of light and dry ſoil, the trees were as dry on the firſt of June, as on the firſt of January. Many trees have never recovered from the effects of their ravages.

Another worm of a diſtinct ſpecies, and called at the time, *palmer-worm*, overſpread our foreſts in this or the next year, devouring the leaves of oak and other ſpecies of wood.

It is a prevalent opinion that uncommon flights of wild pigeons in America, indicate the approach of a ſickly ſeaſon. I am not inclined to credit any popular opinion, without good grounds; but this ſeems to have been formed on a long ſeries of obſervations. Certain it is that pigeons in the ſummer of 1791 were unuſually numerous. In Maine, there were tracts of foreſt of miles in extent, the trees of which were covered with their neſts.

Courant, July 11.

The ſummer of 1791 was exceſſively hot. At Salem the thermometer was at and above 80 deg. no leſs than 55 days, and above 90, twelve days—an inſtance that had not happened in many years, in that cool place; altho it often happens in the middle ſtates.

Mem. Am. Acad. vol. 2. 91.

On the 27th of November Liſbon ſuſtained ſevere ſhocks of earthquake.

Courant, April 2, 1792.

In autumn, bilious remittents aſſumed, in Philadelphia, the inflammatory diatheſis, ſo predominant in the laſt peſtilential conſtitution. Dr. Ruſh, in his public lectures, mentioned this fact at the time, altho he little ſuſpected what effects that conſtitution was to produce in ſubſequent years. It was found neceſſary to bleed from one to three times. In moſt caſes, the liver was affected with all the ſymptoms of Hepatitis.

M. S. letter from Dr. Ruſh.

At this period the peſtilential or epidemic conſtitution of the atmoſphere began to ſhow itſelf in the infectious yellow fever. It appeared in New-York, in autumn, along the eaſt river, and carried off about 200 perſons. This gave ſome alarm, which ſoon ſubſided.

It muſt be noted that the meaſles in 1788, the diſeaſe which marched in the van of this ſeries of epidemics, appeared firſt in New-York—this was probably the fact alſo in regard to the influenza of the ſucceeding year—and the ſcarlatina anginoſa at the cloſe of 1792. The ſcarlatina of 1789 and 91 in Philadelphia was local, or if it appeared in a few other places, it did not ſpread over the country. All the laſt great epidemics have originated nearly in the ſame longitude between Connecticut and Pennſylvania. It is not to be concluded from this fact that they have been propagated by infection from one ſpot, as from a center; we know this is not the fact; the ſame diſeaſes originating in remote places.* But it ſerves to ſhow that the cauſe or principle of diſeaſe in the elements is of various force, and will firſt ſhow its effects in places where it has the moſt ſtrength.

In the ſame ſummer of 1791, the peſtilential principle began to exhibit its effects in the increaſed malignancy of the tropical fevers. The "unuſual epidemic fever" in Grenada, deſcribed by Dr. Chiſholm, in the Edinburgh Medical Commentaries for 1793, and which was the occaſion of no ſmall ſurpriſe, was the commencement of that ſeries of fatal diſeaſes, which, in ſubſequent years, made dreadful havoc in the Iſlands. This fever became ſo violent and infectious, contrary to the common fever of the tropics, that a labored attempt was made to trace it to ſomites from the coaſt of Africa. The truth is, the fever was nothing more than the common fever of the climate, with the ſuperadded malignancy derived from the exiſting conſtitution of the elements. The ſame fact took place on the African coaſt; that is, the uſual fevers of the climate became more malignant.

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* The mild ſcarlatina, the herald of the epidemic, appeared at New-York and at Bethlem in Connecticut, in 1792, in the ſame month.

This idea is ſuggeſted by a ſeries of ſimilar events in other climates; all the diſeaſes of America, at the ſame time, aſſuming a ſimilar augmented violence, and ſporadic caſes of malignant fever appearing in all parts of our country. Such has been the fact in all other epidemic periods.

To confirm this idea, let it be obſerved that in the ſame year, when this malignant fever appeared in the African Seas on board of ſhips, in Grenada, and in New-York, as well as in ſporadic caſes in other parts of America, the plague carried off two or three hundred thouſand people,* in Egypt, and raged in Conſtantinople with great mortality. In all theſe diſtant countries, the ſame or ſimilar effects were nearly cotemporary. The plague in Egypt continued into the next year; but I have no details of its progreſs and termination. The ſame general principle was experienced in Great-Britain, and the bills of mortality in London continued to ſwell, till the year 1793.

The winter of 1791-2 was ſomewhat colder than uſual. The month of January was remarkable for ſevere weather of three weeks duration. In March a ſlight earthquake was felt in the middle ſtates, but I have no particulars.

Courant, March 19, 1792.

The ſpring months were very rainy in the ſouthern ſtates and the iſlands, which experienced diſtreſſing inundations.

Courant, May 28, 1792.

In the northern ſtates there was a period of ſingularly cold weather in the beginning of June, occaſioned by a dry N. E. wind. Some perſons uſed fires as late as the tenth day of that month. The heat of the following ſummer, in general, was not extreme.

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* Theſe numbers are to be ſuſpected of exaggeration.

In May and June, a ſpecies of locuſts appeared in the northern parts of the ſtate of New-York, which committed ravages among the grain. The wheat-inſect continued its ravages, and appeared this year as far ſouthward as Elk Ridge in the ſtate of Maryland. On Long-Iſland the deſtruction of wheat was great and diſtreſſing.

Courant, June 25, and July 2, 1792.

In July happened at Philadelphia a violent tornado; but the ſummer was not diſtinguiſhed for the number of this ſpecies of tempeſt. In one inſtance, in Vermont, the hail-ſtones which fell are ſaid to have been from 3 to 6 inches in circumference.

About this time, a malignant fever began to rage in Charleſton, South-Carolina, carrying off the patient in three days, and occaſioning a conſiderable mortality.

Courant, Auguſt 6, 1792.

In the following winter, Egypt was a prey to famin; and the ſtreets of Cairo were filled with dead bodies.

In November 1792 ſeveral ſmart ſhocks of earthquake were felt in Perthſhire, a county in Scotland.

In Philadelphia appeared an inſect in the form of a fly, which generated a ſmall worm or caterpillar, that attacked the tree, called Lime Tree, which is there uſed for ſhade. From that year to the year 1798, this inſect has ravaged thoſe trees, and deſtroyed ſome of them. Juſt philoſophy will not heſitate to believe the cauſe of this phenomenon and of the peſtilence ſucceeding, to be connected.

In this year, 1792, commenced that ſcarlatina anginoſa which became epidemic, with great mortality. I regret that a want of exact regiſters, will not permit me to trace it to its ſources with the preciſion deſireable in all ſuch caſes. I am informed that well defined caſes of the diſeaſe were obſerved in New-York, as early as the month of Auguſt. But it occaſioned no conſiderable mortality in that city, until the following winter.

At Bethlem, in the weſtern part of Connecticut, there were five deaths in this year by the cynanche trachealis. I have not heard of any other inſtance. In Auguſt, there were ſeven or eight caſes of the ſcarlatina anginoſa, but ſo mild as *not to prove mortal.* The reader will note the laſt circumſtance; for I am able to prove, that this diſeaſe in Connecticut, was progreſſive in a remarkable manner, and from the fact, which I believe is not uncommon, will be drawn moſt important conſequences.

The autumn was one of the mildeſt ever known. November was ſo warm that we ſat with open windows, at Hartford, on the 19th of the month. This moderate weather was ſucceeded by ſevere cold, and Connecticut river was cloſed by ice on the 10th of December. The latter part of winter however was not very ſevere, except a week or two in February.

On the 11th of January 1793 appeared a comet in the conſtellation of Cepheus. It was ſeen for the laſt time by Mr. Rittenhouſe on the 8th of February.

Phil. Tranſ. Phil. vol. 3.

In the courſe of this winter and the ſpring ſucceeding, the ſcarlet fever raged in New-York, with conſiderable mortality. It became epidemic alſo in Philadelphia, in the courſe of the ſpring months.

Catarrh was very prevalent in the northern ſtates, at the ſame time; and the ſmall-pox by inoculation at Hartford proved unuſually obſtinate and fatal; indicating an inſalubrious ſtate of the atmoſphere.

In February 1793 the ſcarlet fever invaded the town of Bethlem, like "an armed man," ſays Mr. Backus, Medical Repoſitory, vol. 1. 524. He calls the diſeaſe angina maligna, and it doubtleſs put on the ſymptoms of it in many places. It ſeized almoſt every family and child. It abated in May, diſappeared in November, and re-appeared in January 1794 with nearly its former violence. Nineteen children died in the firſt invaſion, and fourteen, in the ſecond.

We have here diſtinct marks of progreſſion. The diſeaſe in a mild form appeared in Auguſt 1792, then diſappeared. In February following, it invaded the town in its worſt form. Six months therefore intervened between its precurſor, or mild form, and its invaſion with full force.

The ſame diſeaſe appeared in the neighboring diſtrict of country and in diſtant parts, in nearly the ſame longitude, in the courſe of this year; but I have not materials for a detail of facts.

I find however, it prevailed in Litchfield in 1793, and was ſuppoſed to be *imported* into that town from Vermont. It was alſo very mortal in New-Fairfield, the ſame year. I therefore preſume the diſeaſe to have been very general through the weſtern diſtricts of Connecticut, Maſſachuſetts and Vermont, and to have prevailed as far weſtward as Pennſylvania, in this year. Of its progreſs beyond that ſtate, I have no information.

In September and October of this year, about the time the diſtemper ſubſided in Bethlem, it began to exhibit appearances of approach, in the maritime towns of Connecticut. Its precurſors at New-Haven, as deſcribed by Dr. Monſon, a good judge of the ſubject, were "ſlight influenza, ſtinging pains in the jaws and limbs, ſoreneſs in the muſcles of the neck, with a ſlight fever."

In November and December following, ſeveral caſes of ulcerous ſore throat occurred, but they had a favorable iſſue, and the ſymptoms were not alarming.

In January 1794 arrived the criſis of this diſeaſe; it put on its malignant ſymptoms, and in the courſe of the ſix following months, ſeized more than ſeven hundred perſons, principally youth, of whom died fifty two.

See Dr. Monſon's account in my Collection, p. 173.

Here again is diſtinctly marked a regular progreſſion of ſymptoms from September to January; the precurſors being four or five months in advance of the diſeaſe in its moſt violent form.

In Hartford, on Connecticut river, about thirty miles eaſt of Litchfield and Bethlem, I had an opportunity to make perſonal obſervations on the origin and progreſs of this epidemic.

I do not know the date of the firſt caſe; but in my own memoranda, its appearance in my eldeſt daughter, then in the 3d year of her age, is noted under the 12th of May 1793. The attending phyſician informed me, that the diſeaſe was then epidemic. Its firſt appearance therefore muſt have been a week or two earlier.

This diſeaſe was a mild ſcarlatina anginoſa. The patient had conſiderable fever—the paroxiſms were daily, and terminated in profuſe ſweats—there was a partial efflореſcence of the ſkin about the neck and breaſt, and ſome affection of the throat. Its criſis, if I do not miſremember, was about the eighth day. I was informed that in no caſe, did this diſeaſe prove mortal, during this invaſion.

The reader will obſerve the dates—this mild angina invaded Hartford in April and May, about the time, the ſeverity of the diſeaſe began to abate in Bethlem.

Nine months after the invaſion of this mild angina, that is, in February 1794, this diſeaſe appeared in Hartford in its formidable array, and many children became its victims.

Nothing can prove more clearly that infection had no concern in the origin of this diſtemper, than this gradual augmentation of its ſymptoms. If any fact were neceſſary to demonſtrate the all-controlling influence of the elements, in the propagation and termination of the diſeaſe, this *progreſſion* alone would be ſufficient. The mild epidemic of May 1793, was the ſame ſpecies of diſeaſe with that which was then deſtroying life, in the weſtern parts of the ſtate, and in New-York and Pennſylvania; but the condition of the atmoſphero at Hartford was not, at that time, fitted to give the diſeaſe its full degree of violence. The ſummer ſeaſon perhaps ſuſpended the operation of the general cauſe, by means to us unknown. In February following arrived the criſis of the diſeaſe.

I know not whether other epidemic anginas have been characterized by the ſame progreſſiveneſs in the ſymptoms. It is not improbable that they have; and that age after age has paſſed away, without noticing the circumſtance; a circumſtance that throws more light on the origin, cauſes and philoſophy of epidemics, than all the diſſertations on the ſubject, ſince the days of Hippocrates.

My own children were affected with the mild angina in May. I removed, with my family, to New-York in November 1793, *before* the fatal angina invaded Hartford, and *after* it had finiſhed its courſe in New-York; my children eſcaped its violence, and probably in conſequence of this removal. This was an accidental circumſtance in my family, but I ſuſpect a ſimilar removal of children, during the progreſs of that malady, might ſave a multitude of lives; altho the circumſtances of many people will not permit them to avail themſelves of the expedient; and in ſome caſes probably it would fail of ſucceſs. It however deſerves conſideration. The angina had completed its courſe in New-York in 1793 or nearly. It did not invade Boſton till 1795. A removal of the children from the atmoſphere of Boſton in 1795, to an atmoſphere where the diſeaſe had ceaſed, would probably have ſecured moſt of them from an attack.

The ſummer of 1793 was exceſſively hot, after a dry ſpring, and produced a great number of violent guſts, with rain and hail. The autumn was very dry. A fatal dyſentery prevailed in Georgetown, on the Potomak, and in the vicinity, which ſwept away many hundreds of the inhabitants. The ſame diſeaſe prevailed in Coventry, in Connecticut, and killed almoſt every perſon whom it ſeized. A nervous or long fever prevailed in Wethersfield. In ſhort, in moſt parts of the United States, the peſtilential principle exhibited its effects, in ſome form or other, and every where ſwelled the bills of mortality. It extended to the Weſt-Indies, and ſo violent was the epidemic at Grenada, that the phyſicians and inhabitants, unable to account for it, really ſuppoſed it an imported diſeaſe. The treatiſe written by Dr. Chiſholm to prove it imported, is ſatisfactory evidence to me that the diſeaſe was an epidemic. The diſeaſe correſponds in its principal character, with the peſtilential fevers of this country, many of which are known to be generated in our own climate.

In Auguſt 1793 commenced in Philadelphia that dreadful peſtilence which alarmed the United States, and ſpread terror and diſmay over that city. The ſpring diſeaſes, which uſhered in this malady, were influenza, ſcarlatina and mild bilious remittents. See Ruſh's Treatiſe on that fever. Theſe are the moſt certain and immediate precurſors of peſtilence, in this country; and the influenza ſeems to be ſo, in all countries.

During this epidemic, the weather was very ſultry and dry. About the 12th of September, fell a meteor between the city and the hoſpital. The number of victims to this diſeaſe was 4040.

A controverſy aroſe among the phyſicians in Philadelphia, relative to the origin of the plague; one party tracing the diſeaſe, as they ſuppoſed, to infected veſſels from the Weſt-Indies;

the other aſcribing it to exhalations from damaged coffee and filthy ſtreets. This controverſy has occaſioned an unhappy ſchiſm among the medical gentlemen, and the citizens of Philadelphia.

It is greatly to be regretted that gentlemen of the faculty committed themſelves, by prematurely giving poſitive opinions on that important queſtion, and thus laying the foundation for permanent evils to the country. It would have been wiſer to have inſtituted a regular enquiry into hiſtorical facts, relating to peſtilential diſeaſes, antecedent to any poſitive deciſions on the ſubject.

By an account of the deaths in Algiers, kept by Capt. O'Brien, while a priſoner, I perceive that 4893 perſons died in 1793 by the meaſles and plague. There was a conſiderable increaſe of mortality in that year; and we obſerve the meaſles and plague prevalent in the ſame year—an evidence that on the Barbary coaſt, as well as in Europe and America, theſe epidemics are allied.

By this account alſo it appears that in 1789 a number of perſons died by the *aſthma.* It is not probable this was epidemic, and I ſuſpect by this name was intended catarrh or influenza. As this diſeaſe was then epidemic in the United States, it would be gratifying to know whether the ſame epidemic prevailed on the African coaſt, at the ſame time.

It is remarkable that in the ſpring of 1793, when the ſcarlatina anginoſa had firſt commenced its progreſs in America, it began alſo in England. It appeared firſt in the villages about London, and afterwards deſcended into the city. Med. Mem. vol. 4. It continued to prevail for ſeveral years, with different degrees of violence, at different times. See the Monthly Magazines.

The winter of 1793-4 was milder than uſual in America. The thermometer in New-York, in a northern expoſure, deſcended no lower than 13 deg. above 0, and but twice to that degree.

On the 17th of May was a ſingularly ſevere froſt in the northern ſtates of America, which deſtroyed garden vegetables and the leaves of trees. The wheat, oats and flax in many places turned yellow, and fruit was deſtroyed.

This froſt was preceded by a few remarkable hot days, ſuch as we uſually have in June; and ſpeedily followed by a long ſeries of rains, with eaſterly winds.

This froſt has been ſuppoſed to kill the canker-worms, which had ravaged the orchards, for ſome years preceding. Another opinion is, that a hard froſt in April, deſtroyed them, juſt after they were hatched. A third opinion is, that they had run thro their period of exiſtence, and periſhed in a natural way. In confirmation of which opinion, it is ſaid they were evidently declining in the preceding year. There is probably truth in both the latter opinions.

The ſummer of 1794 was, on the whole, not intemperate. We had hot weather, but frequently was the earth refreſhed by ſhowers, and cool weſterly winds. The whooping cough prevailed in New-York.

The ſcarlet fever, in the courſe of this year, ſpread over Connecticut. Its effects are very apparent in the bills of mortality.

It appeared in 1795 in Boſton, in the ſpring or early in ſummer, and continued to prevail in Maſſachuſetts and New-Hampſhire in 1796. Its progreſs from New-York to Maine, about 300 miles or perhaps 400, was run in about four years. It travelled therefore about 100 miles in a year. Such alſo was the fact in the preceding period; as well as in 1735. It ſhould be obſerved alſo that its direction, in the two laſt epidemic periods, has been oppoſite to that of the diſeaſe of 1735. The latter began in New-Hampſhire and marched to the weſtward; the former began in the middle ſtates, and advanced to the eaſtward.

On the 10th of June 1794, the bilious plague made its appearance in New-Haven, a ſeaport in Connecticut. The perſon firſt ſeized with the diſeaſe was, the wife of Iſaac Gorham, living on the wharf, and the nature of her complaint was not underſtood, nor ſuſpected, till near the time of her death, on the 15th.

No ſooner was it known that a peſtilential fever was in the city, than the inhabitants took the alarm, and directed an examination to be made into the cauſes. On enquiry, the following appeared to be the ſources of the diſeaſe, or were reported to be the probable cauſes.

In the beginning of June, Capt. Truman arrived from Martinico, in a ſloop, which was hauled up by the ſtore of Mr. Elijah Auſtin, a few rods from the houſe of Mr. Gorham. This ſloop was *ſuppoſed* to be infected with the peſtilential fever of the Weſt-Indies. From this ſloop was landed a cheſt of clothes, which had belonged to a ſeaman who died with the fever in Martinico; which cheſt was opened and the contents inventoried by Mr. Auſtin, in his ſtore, in preſence of Capt. Truman, of Henry Hubbard, a clerk in the ſtore, and of Polly Gorham, a niece of Iſaac Gorham. Mr. Auſtin and his clerk were ſeized, a few days after the opening of this cheſt, (but how many days is not ſtated) and died about the 20th of June. Polly Gorham was ſeized on the 12th and died on the 17th of June.

Theſe circumſtances appeared to the people at that time, to be clear and deciſive evidence of the importation of the fomites of the diſeaſe; and eſpecially the fact, that Mr. Auſtin and his clerk were attacked with the ſymptoms, nearly at the ſame time. This acquieſcence in an opinion ſo important to ſociety and truth, renders it neceſſary to ſtate the reſult of more careful enquiries.

In the firſt place, the opinion that the ſloop could communicate the infection, is unfounded; for it does not appear that any perſon, ill with yellow fever, had been on board—there certainly had not been any ſick on board, after her leaving Martinico. The ſloop was taken by the Britiſh troops, when they took that iſland, and lay in port ſome weeks, unoccupied; until Capt. Truman had an opportunity to purchaſe her. In the mean time, ſome of the crew, to keep themſelves employed and procure bread, went in the buſineſs of *droging;* that is, tranſporting goods from place to place. One of them died with the fever, but on ſhore, and he had not been on board of the ſloop, after his illneſs. On the paſſage home, the ſeamen were all in good health. There is therefore not the leaſt ground to ſuppoſe the ſloop contained any infection, and no part of her cargo was ſuppoſed to be in a bad ſtate. The external parts of a veſſel or houſe cannot retain or communicate infection.

Secondly. As to the cheſt of clothes, it is probable it contained no infection from diſeaſed perſons; for by the affidavit of

Capt. Truman, taken before Alderman Furman of New-York, at the requeſt of Dr. Baily, the Health Officer of that port, which affidavit I have conſulted, it appears that the clothing, worn by the ſeaman who owned the cheſt and died at Martinico, was all wrapped in his blanket with his body and buried. As Capt. Truman is a man of good character and has made his affidavit, four years ſince the diſeaſe at New-Haven, when all apprehenſions of injury from declaring the truth, have ſubſided, there ſeems to be no reaſon to queſtion the fact.

But as men, who have not attended to the great operations of nature in producing epidemic diſeaſes, naturally look for the cauſes among viſible and tangible ſubſtances, they ſtill found a reſource in a Britiſh regimental coat, which was in the cheſt, and which, it was *ſuppoſed*, might have belonged to a ſoldier who *might have died* of the yellow fever. In conſequence of theſe ſuſpicions, the contents of the cheſt were all burnt.

On examination it appears that the coat was new—and the mate of the ſloop has ſworn that he ſaw the coat plundered by the ſeaman from a bale of goods, and he believes it had never been worn. It was taken by the ſeaman in the buſineſs of drogging, from among the packages of clothing ſent by the Britiſh government for the uſe of the troops. But had we no ſuch evidence, common ſenſe might inform us, that a man, *laboring under a fever in the ſultry climate of the Weſt-Indies*, would not wear his regimentals.

In the cheſt therefore, as in the ſloop, we can find no infection of yellow fever. If Mr. Auſtin and his clerk received the ſeeds of diſeaſe from the clothing in the cheſt, as it is poſſible they did, the ſources of the diſeaſe muſt have been the fetid effluvia of dirty clothes, which had been kept a long time, cloſe packed in a cheſt, in a ſultry climate. It is not neceſſary to ſuppoſe the clothes to have been worn by a diſeaſed perſon. The ſweat and filth from a body in health, if confined in the hot ſeaſon, will ferment and produce a poiſon injurious to health, and productive of yellow fever or other diſeaſe.*

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* It is a well authenticated fact, that Mr. Daniel Phenix, treaſurer of the city of New-York, and his ſons, were infected with a violent yellow fever, by means of the fetid effluvia from packages of bills of

But as ſome reports have been circulated, in contradiction of the teſtimony of Capt. Truman, and as there is a poſſibility that he might have miſtaken the facts, I lay out of this queſtion all the evidence reſpecting the ſloop. For whether the trunk contained infected clothes or not, is wholly immaterial; and without any reference to that point, the evidence that the fever in New-Haven did not ſpring from any imported ſource, is complete.

Mr. Auſtin went on buſineſs to New-York, was ſeized with fever and died. His body was conveyed in a ſloop to New-Haven, and buried. It is an agreed point, that no friend, nurſe or other perſon took the fever from him.

Mr. Hubbard went on buſineſs to Derby, ten miles diſtant, was taken ill and died. His body was carried to New-Haven, and buried. It is agreed that no perſon took the diſeaſe from him.

It is not known that Polly Gorham was ever near the trunk of clothing—the report of her being preſent reſts on the ſtory of a child. But if ſhe was, it makes no difference, for no perſon who attended her was affected, except her mother, who had a ſlight fever. She lived and was ill, a mile from the wharf, and no perſon in that neighborhood was afterwards affected. In ſhort, it is not pretended that the infection proceeded from either of theſe perſons—the *only perſons* who could poſſibly have taken the diſeaſe from the trunk of clothing.

It is admitted on all hands that the infection muſt have proceeded from the houſe of Iſaac Gorham. Now it happens that Mrs. Gorham who was *firſt ſeized and five days before Mr. Auſtin and his clerk*, had never been near the trunk of clothing, nor was an article of clothing from the ſloop carried into the houſe. For this aſſertion, I have the authority of Mr. Gorham himſelf, who is admitted to be a man of veracity.

Had the origin and phenomena of epidemic diſeaſes ever been underſtood, the people of New-Haven would have foreſeen, with

credit, which had been returned into the treaſury, after being long uſed, paſſing through dirty, ſweaty hands, and then being cloſe packed for ſome weeks, in a hot ſeaſon. The fact is related to me by Mr. Phenix himſelf. The attack in the firſt caſe, was ſevere; and on a ſubſequent occaſion, a ſecond attack paſſed off with a nauſea.

a good degree of certainty, that they could not eſcape peſtilence. This will appear from the following facts.

In the winter and ſpring of 1794, the ſcarlatina anginoſa prevailed generally in New-Haven and the neighboring towns; manifeſting a highly peſtilential condition of the elements. One caſe of bilious fever, attended with a vomiting of black matter, occurred as early as the laſt week in March.

For many months preceding the invaſion of the fever, the oyſters, on the coaſt of Connecticut, were in a very ſickly ſtate. Many people can teſtify to the truth of this fact; but I have an account of it recorded at the time by the late Preſident Stiles. In a letter to his ſon-in-law, the Rev. Mr. Holmes, of Cambridge in Maſſachuſetts, dated Sept. 25, 1794, he writes, that for twelve months paſt he had eaten very few oyſters, as they were diſeaſed, poor and dropſical. He remarked this of the oyſters from New-York to Boſton. Thoſe caught on the ſhores of Branford, Killingworth, and at Blue-Point on the ſouth ſide of Long-Iſland, were intolerable. At the date of the letter they were recovering and becoming more palatable. This is a ſtriking proof of the derangement of the elements.

Further evidence of this fact was furniſhed by the multitudes of caterpillars which overran the city of New-Haven, in the ſummer of 1794.* In ſuch numbers were theſe inſects, that they almoſt covered the trees, fences and houſes to the tops of chimneys. The preceding hiſtory furniſhes many inſtances of this phenomenon, preceding and accompanying peſtilence.

Had theſe phenomena been underſtood, the people of New-Haven would have had no occaſion to appoint a committee to examin into the cauſes of the fever. It was hardly poſſible, in the nature of things, that the human race ſhould eſcape the calamity of epidemic diſeaſes, under the operation of cauſes ſo general and powerful.

But theſe were not all. Mr. Gorham, whoſe family firſt ſuffered by the fever, had, in the month preceding the invaſion, cleaned a great number of ſhad, upon the wharf by his door, and thrown the garbage, to the amount of a cart load perhaps, into the dock.

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* Some perſons ſay, this was in 1793, but it is not material.

The alternate waſhing of the tide, and action of a hot ſun, had rendered the putrefaction of this maſs of filth extremely rapid; and there being no current to remove it, the ſtench became intolerable. On the other ſide of the wharf, a few rods diſtant, a boat load of clams had been depoſited on the mud, that the water, during the flux of the tide, might preſerve them; but a great part of them were ſoon ſpoiled, and added to the fetor of the atmoſphere.

To complete the liſt of nuiſances, ſome barrels of damaged pickled cod-fiſh had been thrown from a ſtore into the dock, and the whole was left uncovered during the receſs of the tide. So noiſome was the air of the place, for ſometime before the fever appeared, that the proprietor of the wharf deſiſted from his uſual morning viſits before breakfaſt. For all theſe facts I have the declarations of the perſons concerned and eye witneſſes.

The putrefaction of fleſh, from thirty years obſervations, I can teſtify, will not always produce diſeaſe. But in a peſtilential ſtate of air, the diſſolution of fleſh is unuſually rapid, and the acid evolved, peculiarly noxious. In ſuch circumſtances, putreſcent ſubſtances of all kinds appear to be powerful auxiliary cauſes of diſeaſe. The condition of the elements accelerates putrefaction, and that putrefaction in turn increaſes the deleterious quality of the air.*

Under the operation of ſo many cauſes of diſeaſe, inſtead of being ſurpriſed at the appearance of a peſtilential fever, we are rather to wonder that its ravages were not more extenſive.

That the putrefaction of the fiſh was an exciting cauſe of the fever in New-Haven, is probable from the early appearance of it in ſummer. The firſt caſes occurred about the 10th of June, which is earlier than the epidemic peſtilence of America uſually occurs; and which indicates the exiſtence of ſtrong local cauſes. What further confirms this opinion, is, that after a few weeks the diſtemper was nearly or wholly extinct. In July died only three perſons, and for about two weeks, no new caſe occurred. But in Auguſt, the uſual time of the appearance of this diſeaſe in this part of America, it broke out with freſh violence. It is probable therefore that the *morbid local* cauſes induced the fever in one ſmall ſpot, before the proper ſeaſon for it to prevail. Theſe cauſes being gradually extinguiſhed by the tides and a hot ſun, the diſeaſe ſubſided, until the uſual ſeaſon for ſuch fevers. The ſame took place in New-York in 1795—in 1796—and 1798.

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* I may add to theſe cauſes of the fever, the water of the well uſed by the people living on the wharf, which happened at that time to be covered over with dead rats in a ſtate of putrefaction. This was diſcoverd by the offenſiveneſs of the water.

That the plague in New-Haven was the effect of a condition of the elements united with local cauſes, is proved by ſubſequent events. In the following year, a malignant dyſentery originated and prevailed in New-Haven, deſtroying more lives than the bilious plague of 1794. This diſeaſe is acknowledged by able phyſicians to be of the ſame ſpecies as the yellow fever. See Lind on that point, and Ruſh's Works vol. 5. 5, where it is ſtated, on the authority of Dr. Woodhouſe, that ſeveral perſons took the yellow fever from ſoldiers, laboring under the dyſentery. It is well known alſo that an epidemic yellow fever has been converted, by a ſudden change of weather, into an epidemic dyſentery, and *vice verſa*; as at Baltimore in 1797. It is alſo true that the yellow fever in autumn paſſes off in dyſentery, as in New-London in 1798. The ſame is at times true of the plague in Aſia.

This diſeaſe in 1795, as well as a ſimilar dyſentery in Derby in 1794, demonſtrated the deleterious condition of the elements in that region or vicinity.

If further evidence was neceſſary, we have it in the bad ſtate of the water in ſome of the wells in New-Haven, during the prevalence of theſe diſeaſes, in which, one of the phyſicians of the city has informed me, were animalcules viſible to the naked eye. This fact correſponds with what occured in Athens, during the plague, where the badneſs of the water, it is ſuppoſed, led the people to aſcribe the diſeaſe to the poiſoning of the wells by the Lacedemonians. A ſimilar fact probably led the Germans, in 1349, to ſuſpect the Jews had poiſoned the wells, and on ſuſpicion alone to maſſacre them without mercy. This ſtate of the water, and the ſickneſs of the oyſters alone decide the point, that the principal ſources of the epidemics of 1794 and 5, were in the elements.

It has been aſſerted that no perſon in New-Haven was affected by the fever, without intercourſe with the ſick or with infected clothing. On careful enquiry, I find this is not true. Several perſons were affected who were not in the rooms, nor even in the houſes of the ſick, and who could not be expoſed, otherways than by paſſing along the ſtreets. But ſuch perſons could not take the fever from the effluvia of the diſeaſed. Men who ſuppoſe this, are unacquainted with the powers of infection. Dr. Chiſholm ſtates expreſsly that the infection of that diſeaſe in Grenada never exceeded *ten feet* ; that it was eaſy to avoid it, and many who lived in the houſes of the diſeaſed, eſcaped. Med. Repoſ. vol. 2. 288. Dr. Lind, the ableſt writer on the ſubject, who ſpent his whole life in jails and hoſpitals, has advanced the ſame doctrin. A great number of ſick in a narrow cloſe built ſtreet, may render the air of it infectious, but a few diſeaſed perſons in the wide ſtreets of New-Haven could not produce this effect. In general however the diſeaſe in this place was propagated by infection ; the pollution of the atmoſphere being confined to a ſmall diſtrict on and near the wharfs on low ground, to the leeward of the putrid ſubſtances before mentioned, and near the creek.

But there is one fact that will decide the queſtion relative to the origin of the peſtilential fever in New-Haven, and every other place. It is ſtated by the phyſicians that all other diſeaſes yielded to this fever. After it appeared in June, the ſcarlatina ſubſided, and " in September, when the fever was moſt prevalent, the inhabitants in general were almoſt entirely free from every other complaint."

See Dr. Monſon's account of the fever, in my Collection, p. 178.

Here we have an infallible criterion by which to determin whether a diſeaſe is an epidemic of the place, or introduced and propagated ſolely by infection. A diſeaſe of mere infection can never extinguiſh other diſeaſes of the place. The ſmall-pox introduced by *variolous matter*, and communicated to every family would not abſorb a dyſentery or ſcarlet fever prevailing in the ſame place ; every hoſpital will demonſtrate this principle. A diſeaſe of mere infection would not affect another diſeaſe even in the next houſe. Every diſeaſe that extinguiſhes another diſeaſe current in a town, is an epidemic originating in that place. It not only proves that the atmoſphere will produce that diſtemper, but it proves that it will produce no other. On this principle I will reſt the queſtion, as it regards not only the fever in New-Haven, but every peſtilence that ever exiſted.

The ſummer of 1794 was, in moſt places, leſs ſickly than in 1793 and 1795; yet the ſcarlatina extended its ravages over Connecticut, and Philadelphia and New-York experienced the predominant epidemic conſtitution. In Philadelphia died from 70 to 100 perſons of the bilious plague; in New-York twenty or thirty caſes of the ſame diſeaſe indicated the ſame condition of the atmoſphere. It was the general opinion in New-York, that the city was remarkably healthy; but this opinion, ſo flattering to the people, was a fallacy. The bills of mortality were higher than in healthy years, and this augmented mortality was a prelude to the epidemic of the ſucceeding year.

On the 15th of June was a great eruption of Veſuvius, nearly equal to that of 1779. The lava ran down the mountain on the weſt and extended to the ſea, overwhelming the town of Tome del Greco.

See Univerſal Mag. for Aug. 1795.

In this year the bilious peſtilence prevailed in Baltimore. No ſuggeſtion has been made that it was imported, and the phyſicians and inhabitants ſeem to admit the diſeaſe to have been only a more malignant form of the ordinary autumnal remittent.

In the ſucceeding winter, the epidemic of the ſummer and autumn changed, in Philadelphia, into the form of catarrh or pleuriſy, and in many caſes, was attended with delirium and mania. See Ruſh on this ſubject.

Peſtilential epidemics, or rather the ſtate of the atmoſphere which produces them, uſually affects the brain, in a moſt ſenſible degree. This is obvious from the vertigo, ſo frequent during ſickly periods; pains in the head, dizzineſs and nervous debility often complained of by ſtudious men. In ſome periods, this affection of the brain has appeared in epidemic madneſs. See the years 1355; 1373 and 4.

A few caſes of a diſorder of this ſpecies appeared in New-Haven and its vicinity in the winter after the peſtilence. The patient was ſeized with a violent pain in the head, between the Os frontis and the Coronal Sutures, which was periodical, commencing about 11 o'clock A. M. and increaſing till 2 P. M. In ſome caſes, the paroxiſm was accompanied with delirium; but the pain was limited to the head, and unattended with fever. Bleeding, purging and opium produced no alleviation; but a bliſter on the forehead or temple, ſoon relieved the patient, and effected a cure. This account is taken from Dr. Hotchkiſs, the attending phyſician.

The winter of 1794-5 was very cold in Europe, and in January 1795, the French troops marched into Amſterdam, over the rivers and canals, on the ice. This ſeverity was to be expected from the great eruption of Veſuvius in the preceding ſummer.

The catarrh was epidemic in January and February, in the Britiſh channel fleet. In one ſhip it aſſumed the ſymptoms of a pure typhus.

Trotter's Med. Naut. p. 366.

In America, the ſame winter was milder than uſual. Perſons walked on the battery at New-York, for pleaſure, on Chriſtmas day, with no covering but their ordinary autumnal clothes; and veſſels ſailed up the Hudſon and Connecticut till January. In the latter part of the winter, we had ſome cold weather, and a cool late ſpring.

About the 20th of July, began a ſeries of hot, damp, rainy weather, with light ſoutherly winds; a ſeaſon anſwering to the deſcription which Hippocrates has given of a peſtilential conſtitution. Heavy rains were followed by a humid, cloſe, ſultry air; no thunder and lightning; no north-weſterly winds to cool and refreſh the fainting bodies of men. For many weeks the atmoſphere was ſo loaded with vapor, that no electricity could be excited with the beſt inſtruments. Fruit periſhed on the trees and fell half rotten and covered with mold. Sound potatoes from the market periſhed in my cellar in thirty-ſix hours. Cabbages rotted off, between the head and the ſtalk, as they ſtood in gardens. The moiſture penetrated into the inmoſt receſſes of deſks and bureaus, covering books, papers and clothes with mold, under two locks. The walls of houſes, and the paper of inner apartments became white with mold and required ſcraping. This ſtate of the air produced alſo muſketoes without number; while flies diſappeared. It is obſervable that theſe two kinds of inſects thrive in different conditions of the air—flies in a hot, dry air; muſketoes, in a hot, moiſt air.

It is neceſſary here to correct a miſtake of Dr. Currie on bilious fevers, page 12, where he mentions the years 1795 and 7 as "wetter and cooler than many preceding ſeaſons." The truth is, the latter part of the ſummer of 1795, was on an average three degrees by Farenheit, warmer than the weather had been in the ten preceding years. See a letter from Profeſſor Kemp in Dr. Bailey on yellow fever, p. 54. In the courſe of my life, I never experienced a ſtate of air ſo debilitating and unfriendly to animal ſpirits, as the month of Auguſt 1795. The effects of it are very viſible in the bill of mortality for that year in Philadelphia, which contains double the uſual number of deaths.

In July of this year appeared the bilious plague in New-York. The firſt caſe that excited public attention was that of Dr. Treat, the Health Officer of the port, who fell a victim, on the 29th of the month. His diſeaſe has been aſcribed by ſome perſons, to infection taken on board a veſſel from the Weſt-Indies, the brig Zepher in which a perſon died, whom Dr. Treat aſſiſted in burying. But it is not probable, that this was a juſt opinion; as many other perſons viſited the ſame veſſel, and the wardens of the port were on board, while a part of her cargo, ſome damaged coffee, was thrown into the ſtream, without the leaſt inconvenience to their health. The plethoric habit of Dr. Treat, and his great fatigue in an open boat and in a burning ſun, are ſufficient to account for his diſeaſe.

But admitting him to have taken his diſeaſe from the fomes of a ſick or dead perſon, or from the foulneſs of the brig, the fact does not in the leaſt aid the advocates of infection, for no perſon, nurſe, attendant or viſitor, received the diſtemper from him, nor did the diſeaſe prevail, in the ſtreet where he died, during the ſubſequent ſeaſon.

It was ſaid that three or four ſeamen, belonging to the ſhip William, were ſeized with the diſtemper in conſequence of viſiting the brig Zepher. But on enquiry, it was found, that theſe men only came along ſide of the brig and purchaſed ſome fruit. To ſuppoſe theſe men ſhould all take a diſeaſe from the brig, when two or three wardens of the port, who were ſome hours on board, while a damaged cargo was diſcharged, eſcaped without the leaſt affection, is ridiculous.

But what cuts ſhort all controverſy on this ſubject, is, that fourteen days at leaſt before the death of Dr. Treat, a man in the hoſpital died of a ſimilar fever; and the late Dr. Pitt Smith, informed me in the autumn of 1795, that he viſited another patient a blackſmith, with a ſimilar diſeaſe, early in July. In fact then, the diſeaſe was in New-York before the arrival of the ſuppoſed infected veſſels; and the caſes which occurred early in July, were *precurſors* of the epidemic which was to follow.

It muſt alſo be obſerved that the diſeaſe in New-York never ſpread over the whole city. It ran along the low ſtreets on the Eaſt river, in what was formerly the ſwamp and in the narrow alleys. The high grounds in the center of the city, and the weſtern ſide of the iſland, were healthy as uſual; and the diſeaſe, when carried from the infected ſtreets, upon the elevated parts of the city, exhibited no contagion, but diſappeared.—A ſmall part only of the citizens fled; moſt of them remained, and purſued their occupations, in the greateſt part of the city, with perfect ſafety. The deaths were about ſeven hundred and thirty; among which at leaſt five hundred were foreigners, moſt of whom had recently arrived from Scotland and Ireland.* The mortality in New-York was moſtly owing to this influx of foreigners, not ſeaſoned to our climate.

This fever in New-York was preceded in ſpring by epidemic meaſles, which diſappeared totally during the three months, when the fever was the ruling diſeaſe, and re-appeared in November—a deciſive evidence that the fever was produced and controlled by the ſame cauſe, as the meaſles.

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* Four hundred and ſixty two belonged to the Catholic Congregation under the Rev. Mr. O'Brien, moſt of whom had been ſo ſhort a time in the country, that he did not know them.

In this year alſo appeared the ſame diſeaſe at a landing, called Mill-river four miles from Fairfield, in Connecticut, and about ſixty miles from New-York—a ſmall village, near the water. It was reported that this diſtemper was propagated at Mill-river, by infected perſons from New-York. I have taken pains to enquire carefully of both the attending phyſicians and the clergymen, who viſited the ſick, who all agree, that one man from New-York had died of the fever in the village, that ſummer, and he was dead, *three weeks* before, Mr. Tharp, the firſt man ſeized, was taken ill.

The diſeaſe affected others of his family, but ſpread no further; and the gentlemen abovementioned do not believe it to have been derived from imported infection.

The bilious remittent fever, is annually the diſeaſe of autumn in ſome parts of the ſouthern ſtates; and ſtrangers, viſiting that country from the Delaware to Florida, in the hot ſeaſon run the hazard of a fever. Drs. Taylor and Hansford, two old practitioners in Norfolk, Virginia, ſpeaking of the yellow fever of 1795, ſay, "The ſame fever, with all its malignant and uncontrollable ſymptoms, occurs every year, in ſcattered inſtances, and about the ſame ſeaſon."

See my Collection on Bilious Fevers, p. 151.

But during peſtilential periods, this diſeaſe in that unhealthy country, takes a wider ſpread, and becomes infectious.

In 1795 this was the caſe at Norfolk—a town that is ſituated on low flat land, a few feet only above high-water, and ſubject to autumnal fevers. The diſeaſe prevailed moſt in the narrow ſtreets and poor ſmall houſes, and was moſt fatal to ſtrangers.

Two remarkable facts occurred there and are related in the account laſt cited, to prove that the diſeaſe was occaſioned ſolely by a general ſtate of the atmoſphere in and about the town, without a dependence on infection. The firſt is, that traders who viſited the port, altho they were not known to have had intercourſe with the ſick, took the diſeaſe and died on their return into the country. But a more remarkable fact is, that the ſeamen of a ſhip from Liverpool, which did not approach nearer than five miles diſtance from the town, and which had no communication with the ſhore, except by means of the health-boat, were almoſt all attacked with the diſeaſe, in ten days after their arrival. This was late in the ſeaſon, and when the diſeaſe had nearly diſappeared in town.

In the year 1794 ſeveral caſes of the ſame diſeaſe had occurred in Norfolk. In 1797 the diſeaſe was again frequent. In 1795 and 7, the diſeaſe was ſuppoſed to have been augmented by the great rains and floods which had preceded, and which had brought down the river and ſpread on the ſhores, large quantities of vegetable ſubſtances.

The extreme unhealthineſs of the ſummer of 1795, was manifeſted by unuſual mortality in various other parts of the country. On the level plains of Ducheſs county in New-York ſtate, prevailed a mortal dyſentery and typhus fever. At Coxſakie on the weſt of the Hudſon, raged ſimilar diſeaſes with fatal effects. In ſome weſtern parts of the ſtate, near the marſhes which border the waters of the country, a malignant bilious fever was more terribly fatal, than the fever in New-York.

In Sheffield, a weſtern townſhip of Maſſachuſetts, near two large ponds which form marſhy grounds, bilious fevers, which had not been known there for many years, before, prevailed and in ſome caſes were mortal.

See Dr. Buel's account of theſe diſeaſes, in my Collection, p. 53.

In that town, the progreſſiveneſs of the morbid principle of this peſtilential period, was clearly diſcoverable. Many caſes of intermittents occurred in 1793; and a few inſtances of bilious remittents. This was during the plague in Philadelphia. In 1794, early in ſpring, inflammatory diſeaſes of the pneumonic kind, were unuſually frequent. Theſe were ſucceeded by intermittents, which were more frequent than in the preceding year. In July, the bilious remittent appeared, and 80 inhabitants out of 150, who lived within a mile and a half of the ſouth pond, were affected. In 1795, of 200 inhabitants within three fourths of a mile diſtant from the north pond, 150 were affected with the ſame diſeaſe—but few died.

In 1796, the dyſentery, which had not appeared in many preceding years, began its attacks on children, and not long after adults were taken either with the ſame diſeaſe or with the bilious remittent. Of one hundred families living within a mile and a half of one of the ponds, not ten eſcaped ſickneſs—more than half of the inhabitants were, in the courſe of the ſeaſon, attacked with one or other of the above mentioned diſeaſes. Of 150 perſons who lived neareſt to the pond, not ten eſcaped. The deaths by theſe diſeaſes were forty-four. Here then was a regular increaſe of malignancy in the autumnal diſeaſes, from intermittents, to the worſt form of dyſentery and bilious remittent.

Med. Repoſ. vol. 1. 456.

In the preceding period, great mortality prevailed among the geeſe in ſome parts of our country; and in the year 1796, a ſimilar mortality among other fowls. I have not been able to obtain a particular deſcription of the ſymptoms, but it was obſerved the tranſition from apparent health to death, was very rapid.

In 1796 the meaſles which commenced in New-York in 1795 was epidemic in Connecticut; and unuſually prevalent in London.

In 1796 alſo the bilious plague again appeared in New-York, but in a different quarter of the city from that which was principally affected, the year preceding. In 1795, it began and was moſt general in the north-eaſtern part—in 1796, in the ſouth-weſtern part, near the battery; and in both ſummers, its ſeat was along the wharves on the Eaſt river, and in the adjoining ſtreets and alleys. All this part of the city is a level, formed by extending the land and wharves into the Eaſt river. The land is of courſe looſe and porous, admitting, in many places, the water of the ſea into the cellars of the houſes; ſome of which are penetrated, on every flux of the tide. Theſe artificial ſtreets, Front and Water ſtreets, are not eaſily waſhed clean, on account of their level poſition, and they receive the filth waſhed from the higher grounds of the city. To theſe ſtreets, and ſimilar ones in the ſwamp on the north-eaſt, was the malignant diſtemper principally limited.

In 1796 a new wharf below Exchange ſlip, which had been timbered the preceding autumn, and left unfilled, had become a reſervoir for all kinds of putrid, filthy ſubſtances, and was ſuppoſed to be a powerful cauſe of diſeaſe.

Beſides, the quarter in which the diſeaſe raged this year, is almoſt wholly covered with old wooden houſes, and many of them, built before the raiſing and paving of the ſtreet, have their lower floors two or three feet below the ſurface of the pavements. In this diſtrict appeared the yellow fever in June ; but a ſeries of rainy weather and cool weſterly winds, ſuſpended its action, in the beginning of July. Succeeding hot weather renewed it, and in the limits above deſcribed, extending about forty or fifty rods, about ſeventy perſons fell victims. The other parts of the city remained in the uſual autumnal ſtate of health, with only a few ſcattering caſes of the plague.

At Wilmington, North-Carolina, prevailed a ſimilar diſeaſe. It was preceded by the dyſentery, in July, after a very wet ſpring. When the bilious fever commenced in Auguſt, the dyſentery declined, and thoſe who had been affected with it eſcaped the fever. About one hundred and fifty deaths, by theſe two forms of diſeaſe, occurred in 130 families. Different opinions were entertained about the origin of the fever ; but the phyſician who gives this account has no doubts of its domeſtic origin. He informs us further that a few caſes, in that town, occur annually, which aſſume all the ſymptoms of a violent yellow fever.

Med. Repoſ. vol. 2. 153. Dr. Roſſet's letter.

In this year, the diſeaſe occaſioned a conſiderable mortality in Charleſton, South-Carolina, and in Newburyport, in Maſſachuſetts. It appeared in Boſton alſo, but was not general nor ſevere.

In Charleſton, it ſucceeded one of the moſt deſtructive fires, ever known in that city ; and was in part aſcribed to the ſtagnant water which accumulated in the open cellars.

In Newburyport, there was no plauſible pretext for aſcribing the diſeaſe to imported infection ; and the general belief was, that the immediate exciting cauſe, was, the remains of large quantities of fiſh which had been left to corrupt on the wharf, near which the diſtemper originated, and which occaſioned an intolerable ſtench. But in that town, a previous increaſe of mortality indicated a ſickly ſtate of the elements ; as in all other places, where the peſtilence has made its appearance. In none of the northern ſtates, which are uſually healthy, has the bilious plague occurred without other diſeaſes for precurſors.—The diſeaſe in Newburyport was confined to a low ſtreet or two, and when carried upon the high grounds, it exhibited little or no infection, but diſappeared with the death or recovery of the patient.

M. S. Letter from Nicholas Pike, Eſq.

In Boſton, the diſeaſe ſpread only in a ſmall part of the town, adjoining the water. The phyſicians were unanimouſly of opinion, that it was not occaſioned by any fomites from infected articles imported, but generated in the town.

See Dr. Warren's Letter in the Medical Repoſitory, vol. 1. p. 136.

The peſtilential ſtate of the elements was ſtrongly marked, this year, by the poorneſs of the ſhad brought to market in New-York. Theſe were all thin, lean and ſmall; and for this reaſon, I purchaſed none for my own uſe, during the ſeaſon. Other perſons obſerved the fact; and I am ſince informed that ſuch of thoſe fiſh as were pickled, periſhed in defiance of all human care to preſerve them. The ſame ſtate of the ſhad was obſerved in Connecticut.

Some caſes of yellow fever occurred in Philadelphia in 1796; catarrh was frequent in the winter, followed by meaſles of a moſt inflammatory nature. A remarkable halo appeared on the 25th of July.

Ruſh, vol. 5. 9.

It has been already obſerved that the winter of 1795, was remarkably ſevere in Europe. In America the ſame winter was as mild as uſual. But in the ſummer and autumn of 1796, the northern ſtates experienced a moſt ſevere drouth.

The following winter was very ſevere; the cold exceeding what is uſual, and being of long duration. The ſummer of 1797 was cool and wet. The winter of 1797-8 was ſevere—and the cold of very long duration. It commenced early in November and continued till March. The Hudſon and Connecticut were cloſed in November; a very rare occurrence. For ſeveral weeks in November and December, the wind, without much ſnow on the earth along the Atlantic coaſt, was from the north-weſt and intenſely dry and cold.

In Auguſt 1797 appeared a comet, which, according to calculations of aſtronomers, paſſed near the earth, altho it was of ſmall apparent magnitude, and ſeen by few people.

The influence of this ſpecies of bodies in occaſioning great tides, and violent ſtorms, has been already mentioned, and of that influence, in the preſent inſtance, I was a witneſs. In 1797 my reſidence was, as it had been the preceding year, on a height of York Iſland near Corlaer's Hook to the northward of which is a flat, which is never covered with water by a common tide, but is overſpread by ſpring tides, or any unuſual ſwell in conſequence of eaſterly winds. I obſerved, as early as the laſt week in May, high tides were unuſually frequent and the ſwell extraordinary. In the city of New-York, the ſame fact was obſervable; and the inhabitants about Beekman ſlip will recollect how often the wharves and ſtreet were covered with water. Theſe tides were not to be accounted for, on any known principles of lunar influence, and I frequently mentioned the phenomenon to my friends, but without ſuſpecting the cauſe. The ſame phenomenon was noticed at other places. In Norfolk, the epidemic fever was, in part, aſcribed to unuſual tides; as I was afterwards informed. On the Delaware, the overflowing of the low lands, below Philadelphia, was extraordinary, and ſome phyſicians aſcribe to this cauſe the yellow fever, which ſwept away moſt of a family by the name of Whitall.

I was lately mentioning theſe events to a reſpectable gentleman in Stamford,* who inſtantly recollected a fact which confirms the foregoing account. He remarked that the common practice in that town, is to mow the ſalt meadows, at the quadratures of the moon, on account of ſmall tides; but in 1797, the calculations failed, and the people were much troubled to collect their hay, on account of high tides—a circumſtance that was very ſurpriſing to him at the time, but he did not advert to the probable cauſe. This was in Auguſt; about the time that the comet was firſt obſerved. The fact then of the influence of comets, in raiſing the waters of the ocean, is well eſtabliſhed; and the appearance of a comet in autumn explained the phenomena of the tides to my ſatisfaction.

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* The Hon. John Davenport, now repreſentative in Congreſs.

The influence of comets in augmenting tempeſts is equally certain and remarkable.

On the 19th of Auguſt, a ſtorm and whirlwind in South Pruſſia tore up foreſts carried trees along like ſheaves of wheat, and levelled ſeveral villages.

In Rome and Naples happened a moſt extraordinary tempeſt on the 25th of September, ſuch as the oldeſt man could not recollect. It took up men and carried them ſome diſtance. The aſtronomers were conſulted and they aſcribed it to the approximation of the comet.

A ſtorm of hail in the province of Macconnois, in France, and on the borders of Burgundy, deſtroyed the vines and fruits of the earth in thirty-four villages. In the appropriations made afterwards by the councils of France, four millions were granted to repair the loſſes by hail, inundations and other diſaſters.

On the 7th of September, a conſiderable ſhock of earthquake was felt in the Weſtern Pyrenees. On the 28th of the month was a volcanic eruption in Guadaloupe; and many earthquakes occurred during the autumn.

In England, the ſummer was ſo rainy and wet, as to injure the corn and threaten the inhabitants with ſcarcity. It would require pages to relate all the accidents by floods in Great-Britain from Auguſt to the cloſe of the year.

During the autumnal months, the Black ſea alſo was unuſually tempeſtuous, and the loſs of ſhipping alarmed Conſtantinople, with apprehenſions of a ſcarcity of proviſions.

In February, 1797, South-America was terribly convulſed. Quito and the neighboring provinces ſuffered, by the deſtruction of almoſt every houſe. Mountains were detached from their ſtations and rolled againſt each other, burying villages in ruin. Volcanoes emitted fire, lava, and rivers of water. It is ſaid, that 40,000 inhabitants periſhed.

On the 11th of January 1798 a ſhock of earthquake was felt in Lancaſter, Pennſylvania, and the neighboring towns, during which appeared to iſſue from the earth a flame or blaze, like the burning of a chimney.

In this month, the ſevere cold reached the Weſt-Indies, and froſt appeared, for ſeveral mornings, on the windows in Port Royal Pariſh, in Jamaica. A ſmall earthquake was felt there in January.

Royal Gazette, Jan. 29, 1798.

In February 1797 alſo violent earthquakes were experienced on the weſtern coaſt of Sumatra, in the Eaſt-Indies.

This year, 1797, was remarkable for other ſingular phenomena in Europe and America.

In England a peſtilence among cats ſwept away thoſe animals by thouſands. It ſeems that this diſeaſe began as early as April, and ſucceeded an epidemic catarrh among the human race. The ſame cat-diſtemper was afterwards epidemic in France. A ſociety at Montpelier inſtituted an enquiry into this remarkable phenomenon.

The cat-diſtemper appeared in Philadelphia, as early as June, and proceeded northward and eaſtward, like the catarrh of 1789. In Auguſt it was very fatal in New-York, and in the courſe of the ſummer and autumn, it ſpread deſtruction among thoſe animals over the northern ſtates.

In Auguſt, dead fiſh, in great numbers, were ſeen to float down James' river, in Virginia, for many days in ſucceſſion.

Canine madneſs, during the ſame year, was unuſually epidemic and attended with fatal effects, of which full accounts may be ſeen in the firſt volume of the Medical Repoſitory.

Theſe phenomena indicate an unhealthy ſtate of the elements. But it is a remarkable fact that, in ſome places and ſeaſons, the principal force of the epidemic conſtitution ſeems to be ſpent on *one* ſpecies of animals, while others are exempt. Thus in England, the catarrh, which had affected mankind in 1797, ceaſed, before the epidemic ſeized the cats. In America, the northern ſtates, with the exception of a few places, were remarkably healthy, in 1797, while cats died in multitudes. And it is a frequent occurrence in Europe, that while the plague or ſome other malignant diſeaſe is afflicting the human race in one country; in another country, mankind will eſcape, and a moſt terrible mortality will occur among cattle, horſes or ſheep.

In 1797 the bills of mortality in the northern ſtates, which had been ſwelled very high by angina and malignant fevers, fell nearly to the ſtandard of health. There are a few exceptions.

The plague appeared in Philadelphia, Baltimore, Norfolk and Charleſton. In the two latter cities, it is conſidered, as the uſual autumnal fever, with aggravated ſymptoms, from ſeaſon or other local or temporary cauſes.

In Baltimore, the diſeaſe appeared firſt in the form of a common remittent, but increaſed in malignancy till late in autumn and became infectious. The hiſtory of this epidemic is minutely ſtated by the magiſtracy of Baltimore, and is too intereſting to be paſſed with a ſlight notice. The following is a correct abſtract of the ſtatement made and publiſhed by authority.

The commiſſioners ſtate to the mayor of the city;

That the firſt appearance of the fever was near the end of June in two young men, Parkin and M'Kenna, who occupied a warehouſe in South-ſtreet and who died in a few days. The warehouſe was examined, and was found to contain nothing which could be the ſpecial cauſe of the fever; nor is it ſuggeſted that they were infected from abroad. No perſon received the diſeaſe from them. From this time till the cloſe of Auguſt, Weſt Baltimore remained in a ſtate of unuſual health.

In Eaſt Baltimore (Fell's Point) a bilious fever had ſhowed itſelf early in the ſeaſon, and gradually ſpread and grew worſe; but was ſuppoſed to be no other than the common ſickneſs of the ſeaſon. It therefore excited no alarm, till the 26th Auguſt, when a rumor prevailed, that the fever was ſomething *more than common.* The chairman of the board addreſſed a letter to each of the phyſicians in that part of the city, requeſting to be informed whether any caſe of contagious diſeaſe had come under his obſervation.

Dr. John Coulter wrote for anſwer that ſince the third week in June, a fever had prevailed and become epidemic, affecting all deſcriptions of people, but moſtly thoſe who labored hard, in the heat of the ſun, intemperate perſons and thoſe who expoſed themſelves to night air after the labors of the day. The diſeaſe was violent, and unleſs ſpeedily aſſailed with powerful remedies, proved fatal. It had on that day, Auguſt 26th, become general, and " aſſumed to itſelf the ſole government of the diſeaſes," in that part of the city. " During the wet weather, in the laſt of July and beginning of Auguſt, it yielded, for near two weeks, to the dyſentery," which aftewards gave way to a recurrence of the yellow fever. [The reader is deſired to note that fact.]

Dr. Coulter calls the fever an epidemic, in contradiſtinction to imported contagion, and ſays, " it is in the locality of our atmoſphere, the ſource of which I can perceive in every ten ſteps I take in our ſtreets, ponds of ſtagnant water, and ſinks of putrid animal and vegetable matters, exhaling perpetually under a hot ſun the moſt offenſive effluvia." The concluſion he draws is, that the diſeaſe was *not individually infectious*. He then mentions the uniformity of the ſymptoms, and the correſpondence of the fever with the diſeaſes which have prevailed in that city and in other parts of the continent for a number of years paſt. He enumerates the ſymptoms, which are exactly the ſame, as obſerved in New-Haven, New-York and Philadelphia.

Doctors Alexander and Jaquitt agree in the facts that the diſeaſe was not imported nor ſpecifically contagious.

The board of health then called a meeting of the phyſicians in Weſt Baltimore, and inquired whether any contagious ſickneſs had come under their knowledge. They anſwered in the negative. Three of their number, at the requeſt of the meeting, went to Eaſt Baltimore and viſited a number of the ſick. They reported on the 29th of Auguſt, that the diſeaſe was not a malignant, contagious or yellow fever, but the bilious remittent. Their report quieted the alarms of people.

On the 2d of September the commiſſioners were alarmed with the opinion of the phyſicians in that part of the city, that the *diſeaſe was ſomething more than common.*

Five members of the board, with Dr. Moores, went to the point to examin for themſelves. They found the diſeaſe had ſpread, chiefly among the poor, who lived in confined dwellings —a few perſons were dangerouſly ill; but on the whole, were convinced that the diſeaſe was *not contagious*.

The next week, the diſorder aſſumed a more threatening aſpect. The launching of the frigate on the 7th of September, collected many people together, who were expoſed to a hot ſun and fatigue, which ſpread the diſeaſe to Weſt Baltimore. The next day the board of health received regular information that there was *contagion in the diſeaſe.* A meeting of the faculty was called, and ſuitable directions given to check and alleviate the calamity.

The whole number of interments in the city and precincts from Auguſt 1 to October 29th—Adults 408; children 137. Total 545. Number of inhabitants at Fell's Point (where the diſeaſe principally raged) who removed during the ſickneſs 671. Thoſe who remained were 2679. Total 3350.

This plain and candid narrative of facts, which is certified by the preſidents of both branches of the city council and by the mayor, Mr. Calhoun, does great honor to the integrity and diligence of the commiſſioners; and *if the laws of nature are to be relied on as uniform in their operation, this report alone will decide every diſputed point relative to the origin and phenomena of the yellow fever.*

It is here decided by unequivocal evidence; evidence that precludes the carping of prejudice and the caſuiſtry of intereſt, that the yellow fever and the bilious remittent are the *ſame diſeaſe,* differing only in degrees of violence; and it is agreed on all hands that the remitting and intermitting fevers are the ſame diſeaſe, with a ſimilar difference in violence.

The diſeaſe began at Baltimore early in the ſeaſon, in June, and for more than two months, prevailed as a remitting fever of the common kind, without infection, and it is agreed on all hands not to be of imported origin. During a wet ſeaſon, the damp weather caſt the diſeaſe upon the inteſtines, and it appeared in the form of a dyſentery—a moſt important fact, which proves what Dr. Lind has aſſerted, that a dyſentery is a yellow or malignant fever ſeated in the bowels. The wet weather ceaſing, the fever reſumed its former appearance, and gradually increaſed, till it exhibited its *worſt forms and became infectious.*

Had the advocates for the domeſtic origin of this fever *contrived* and directed a ſeries of facts, to prove their own doctrines, it would not have been poſſible to collect ſtronger evidence in their favor, than the report of the board of health in Baltimore.

In Philadelphia, the diſeaſe in 1797 appeared, in a few caſes, as early as June—one on the 5th—one on the 9th—one on the 15th and another on the 22d. Theſe caſes, inſtead of being conſidered as proofs of a peſtilential air, and precurſors of more general ſickneſs, are thrown entirely out of the queſtion, by the advocates of imported fomites. The diviſion of opinions, which originated in 1793, relative to the cauſes and origin of that diſeaſe, was revived with aſperity. One party among phyſicians contended that the diſtemper was introduced into the city by the ſhip Arethuſa, which arrived from Jamaica and Havanna, on the 23d of July. Another party believed the ſources of the diſeaſe to have been, noxious exhalations from putrid ſubſtances in the city, with an augment from the foul air of the ſnow Navigation from Marſeilles. The evidence to ſupport each of theſe opinions, is publiſhed in the proceedings of the College of Phyſicians, and of the Academy of Medicin.

The city of Philadelphia was deſerted by a great proportion of its inhabitants, and thus the mortality was limited to about one thouſand victims. It prevailed principally in the ſuburbs.

This epidemic was followed as uſual by the influenza.

By foreign publications, it appears that the catarrh was epidemic in England in the four firſt months of 1797. I have no particulars of the violence or extent of this diſorder; but if it was ſevere and general, no event is more certain than that ſickly ſeaſons will follow.

What confirms this opinion, is, that in the following ſummer, the plague raged in Conſtantinople, on the Barbary coaſt, and in Corſica. It appears by an official letter of the French miniſter Sotin, that there was a difference of opinion in regard to the epidemic in Corſica—ſome calling it the plague; others, a malignant fever. Thoſe who called it the plague, were prepared to account for it, by the tale of a Turkiſh veſſel wrecked upon the iſland, with diſeaſed people on board. But the diſeaſe ſubſided without very extenſive ravages.

This malignant fever however occaſioned no ſmall alarm in England. The government ſent orders to ſhips cruiſing in the

Mediterranean to have no communication with veſſels from Corſica, and a proclamation was iſſued ordering ſtrict quarantine to be performed by all veſſels from Corſica, Minorca, Gibraltar and Spain within the Mediterranean.

In 1797 the bilious plague carried off forty-five of the inhabitants of Providence. Of this diſeaſe, I have a minute and judicious account from Mr. Moſes Brown, which is here abridged.

In 1791, the year when the diſeaſe firſt appeared in the Weſt-Indies and New-York, ſeveral perſons died of a ſimilar fever in Providence. Two women died in one family, near the centre of the town, after three days illneſs. They vomitted bilious matter, and were yellow, with livid and purple ſpots. The ſecond, being ſeized two days after the death of the firſt, might have taken the diſeaſe by infection; but no ſuſpicion exiſted that the firſt had acceſs to any infecting cauſe.

On the 14th of Auguſt died another perſon in a different part of the town, and on the 21ſt of September, a fourth, with ſimilar ſymptoms. As no alarm had then been excited by yellow fever, little notice was taken of theſe caſes; but the attending phyſician, a reſpectable character, who viſited many patients in 1797 and was affected with the diſeaſe himſelf, has ſince pronounced the diſeaſe of 1791 and of 1797 to be the ſame.

A caſe very ſimilar to theſe occurred in September 1792; and on the weſt ſide of the river, prevailed a ſingular epidemic, in which perſons became yellow, with black urine, coſtive bowels, pains in the right hypochondrium, without fever. Some had petechial ſpots, and one perſon, petechia, vibices and hemhorage, yet the diſeaſe was not mortal, nor malignant.

In 1793 a perſon from Philadelphia was ill and died of the yellow fever in Providence, but no other was infected.

In 1794 ſeveral perſons had the ſame diſeaſe, but they took it probably in Carolina, where they had been on a voyage; the diſeaſe did not ſpread by infection.

On the 11th of July 1795, died Capt. J. Gifford, a reſpectable man, of the ſame diſeaſe. No infection was ſuppoſed in the caſe—he was buried under arms, but no inconvenience was experienced from it, at the time. Yet two years after, viz. in

1797, his family were affected with the diſorder, at the time when it became epidemic in the neighborhood.

Several other caſes occurred, in the ſame year, and one of them exhibited infection.

Theſe caſes demonſtrate a peſtilential principle exiſting in that town, in every ſeaſon from 1791 to 1795 incluſive; at the time when other parts of the United States were more ſeverely afflicted. They were the diſtant precurſors of a more general calamity in that town, which did not arrive till 1797.

Sporadic caſes of peſtilential fever do not render it *certain* but *probable*, that the diſeaſe will, in a future ſeaſon, become epidemic. In 1796 cholera infantum and dyſentery were prevalent.

In 1797 the hydrophobia was prevalent in the ſtate of Rhode-Iſland, as well as in other ſtates. One T. Lyon was bitten by a dog, the wound healed, and he was ſeized four months after, and died. The peſtilence among cats prevailed alſo in Providence.

In this year alſo prevailed at Weſtport in the ſame ſtate, and on Nantucket iſland, a very malignant epidemic dyſentery. At Weſtport died 30 patients of 79 who were ſeized. On Nantucket the diſeaſe was leſs mortal; about 100 died out of 2000 patients. On examination, it was found that under the houſe of the family firſt ſeized, there were ſome barrels of putrid fiſh, and other nauſeous matter.

It was ſuppoſed alſo, that the diſeaſe might have been augmented by the effluvia of a large pond, at ſome miles diſtance, which had become ſtagnant, filled with graſs, and the ſhores ſtrewed with dead fiſh. A number of men, on this diſcovery, opened a trench to drain off the water, and let in the tides, after which, it was ſuppoſed, the diſeaſe aſſumed a leſs malignant aſpect.

The peſtilential condition of the air at Providence in 1797, manifeſted itſelf very early in the ſeaſon; the firſt death occurring as early as May 5th—the next on the 25th of June—the third on the 4th of July—the fourth on the 27th—the fifth on the 29th, and the ſixth on the firſt of Auguſt. The ſymptoms in all theſe caſes, were the predominant ones of the true yellow fever ; and the bodies exhibited more or leſs petechiæ and vibices. Theſe caſes occurred *before* the arrival of the ſchooner, to which popular clamor afterwards imputed the whole evil. Theſe were the ſcattered precurſors, which, had the ſubject of peſtilence ever been inveſtigated, with philoſophical ingenuity and Chriſtian candor, would have rendered the epidemic a probable event to the citizens of Providence, as early as July and would have taught them to uſe all human means to avoid or mitigate the calamity.

On the 8th of Auguſt arrived the ſchooner Betſey, Capt. Barton, from the Mole of Cape Nicholas, after 24 days paſſage. Her cargo was only a few hogſheads of coffee. She lay at the wharf, till the 20th, when an increaſing alarm from new caſes of the fever induced the police to order her to be removed and cleanſed.

On enquiry, it was found that three of the ſchooner's people had been ill in the Weſt-Indies, but no one died. One of theſe only had been ill on the paſſage, but had recovered ſo as to do duty, ſeven days before her arrival. There were five perſons on board, during the paſſage, none of whom were affected by diſeaſe from infection or other cauſe.

The death of Mr. Arnold, the cuſtom-houſe officer, who was ſaid to have viſited the ſchooner, and ſeveral of his family, gave riſe to the report that the fever began from fomes on board of her. This point will be hereafter diſproved. Certain it is, that another officer of the cuſtoms ſlept on board of the ſchooner *ſeven* nights ; another *five*, and another young man *two* nights, with Brown, the owner of the blankets hereafter to be mentioned ; all of whom eſcaped diſeaſe of any kind.

It was alſo ſaid that the woman who waſhed two blankets, belonging to a diſeaſed ſeaman, took the fever and died. On inveſtigation, this proved to be an idle tale. The blankets were owned by one Brown, who had not been ſick ; and not having any uſe for them in warm weather, they had lain in his cheſt. On his arrival, they were carried home, ſpread out on the fence to air ; they were then carried to his ſiſter's to be waſhed and lay two days before the work was undertaken. The day after the waſhing, the women were taken ill; which was two early for the operation of infection, unleſs highly concentrated. But in fact the blankets were not infected; never having been uſed by any diſeaſed perſon; and the mother and others who handled them, when firſt opened, never had the diſeaſe.

But ſtronger circumſtances attended this caſe. The blanket belonging to Rophy, the only ſick man, on the paſſage, and his other clothes, worn during his fever, and colored yellow, by his perſpiration, were carried to his houſe; the blanket ſpread out for children to play on, before it was waſhed; afterwards waſhed by his wife; and no perſon took any diſeaſe from his clothes or blanket.

Such are tales of imported diſeaſes, raiſed by ignorance and propagated by intereſt, pride or credulity, to which the buſineſs of the merchants and the commerce of the country are to be ſacrificed!

Many other reports were ſpread about the infection from this ſchooner which, upon ſtrict enquiry, were found to be equally groundleſs. Such as the introduction of the fever into Warren, where the veſſel ſtopped, on her way to Providence. The caſe was, one Cole, an officer of the cuſtoms, ſculled a large boat a mile or two, againſt the tide, in a foggy evening; went on board, wet and fatigued; without refreſhment or change of clothes, ſlept in a cabin with broken windows, took a ſevere cold; repeated his viſit to the ſchooner the next day; on the third day went to Providence, a diſtance of ten miles in the rain; tarried two nights without a change of clothes; returned on foot, and was taken ill of a bilious fever and died in about ſeven days. Yet after all this fatigue and imprudence in the man, enough in all conſcience to kill him, men are found weak enough to charge his diſeaſe to the ſchooner.

But it happens, that other ſimilar caſes of fever occurred in Warren, in perſons who had never viſited Cole or the ſchooner; and one at the diſtance of three miles from the town. The whole tale therefore comes to nothing.

One fact more, and I will quit the ſubject of correcting the popular errors on this head. The men belonging to the ſchooner were diſmiſſed at Providence and returned to their families, with their ſea clothes of courſe. My informant took pains to enquire of every family, whether any of them had been infected; and he found not one inſtance, altho the families conſiſted of about forty ſouls!—The caſe of the unfortunate family of Mr. Arnold would afford ſome ſlight ground to ſuſpect the infection to be communicated from the ſchooner to him or his ſon, the latter having viſited her;* but it happens that Mr. Arnold's wife, who had *not* been on board, nor otherwiſe expoſed, was ſeized fifty-ſix hours *before* her ſon and more than three days *before* her huſband. Thus the reports of infection from abroad, when well ſifted, vaniſh into ſmoke; and I am perſuaded this would generally be the reſult, if men would be faithful to themſelves, to truth and their country.

On the 12th of Auguſt, the fever took a more rapid ſpread, probably from a ſudden alarm by the burning of two tons of hemp, by means of a ſpark from a blackſmith's ſhop, as it was paſſing the door. This was four days after the arrival of the ſchooner, and occaſioned the popular clamor which was raiſed about her infection. But the appearance of the diſeaſe long *before* her arrival is deciſive of the queſtion.

This diſeaſe had its own atmoſphere; raging moſtly in a part of Providence much expoſed to the effluvia of great collections of filth in vaults, from a diſtillery, and in other places. Some caſes however occurred in other ſituations; and many parts of the ſtate exhibited the peſtilential principle, in ſporadic caſes, or local epidemics, as at Briſtol, Warren, Greenwich, Indian Point, Glouceſter, Warwick, &c.

In Providence, the diſeaſe affected fifty-ſix families—8 before the arrival of the ſchooner, and 48 afterwards. In 33 of theſe families, only one perſon in each, had the fever; and as ſome of the families are large, the infecting principle could not have been very powerful. In the large houſe, where lived the women who were firſt taken ill, after the ſchooner arrived, reſided 9 families, conſiſting of 37 perſons, only 12 of which were affected. In the hoſpital the nurſes and attendants *all* eſcaped.

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* It is not rendered certain that the father had been on board; but that the ſon had, is not queſtioned; ſo had at leaſt one hundred others, who were not afterward affected with the diſeaſe.

Some inſtances of this diſeaſe appeared in the following winter; and there were caſes alſo of the ulcerous ſore throat. In the north part of the town, ſome caſes of the yellow fever occurred in the laſt ſummer—1798.

In 1797 a malignant fever is ſaid to have been introduced into a village in Chatham, on Connecticut river, by a veſſel from the Weſt-Indies. I underſtand that it was confined to a cluſter of houſes by the water; but I have not been able to collect the facts in detail, altho I have written letters for the purpoſe.

During the late peſtilential period, the ſtate of the atmoſphere produced its uſual effects in winter; which appeared in the extraordinary ſymptoms of pleuriſy and peripneumony.

It has already been remarked that in periods when plague and other mortal epidemics rage in ſummer, the diſeaſes of winter aſſume new ſymptoms. The pleuriſy, at ſuch times, has often become epidemic and even infectious. It is in fact a modification of the ſame peſtilential principle, as that which renders bilious fevers in ſummer epidemic and infectious. The fatal effects of this ſpecies of pleuriſy in Connecticut, in the winter of 1761, have been mentioned.

In the winter of 1795-6, after the epidemic in New-York, ſeveral caſes of a ſimilar kind occurred, and an able phyſician of plethoric habit and ſtrong fibres, fell a victim to a peripneumony, with anomalous ſymptoms.

In the following winter, a ſimilar diſorder attacked many people in Connecticut. Three men in Hartford, of one family, two brothers and a couſin, all men of robuſt health, were attacked and carried off in the compaſs of a few days. Others of the ſame family, and ſeveral perſons of a ſimilar habit were affected, but recovered. It was far leſs general than in 1761.

This ſpecies of pleuriſy appeared in Philadelphia as early as September 1791, the month when the malignant fever prevailed in New-York. A patient of Dr. Ruſh had a "red face, inflamed eyes, a perpetual toſſing and ſighing, ſtrong animal powers, but weak pulſe and ſizy blood." In February 1792 many caſes of ſimilar pleuritic fevers occurred in Philadelphia—diſeaſes afſumed the inflammatory diatheſis which has remarkably characterized the epidemic of the laſt peſtilential period.

In the ſpring of the year 1798, a mortal fever raged in Fredericktown, Maryland, beginning with laſſitude, chills and pain in the head, and producing, on the third day, vertigo and ſpaſm in the breaſt.

Letter from Dr. Baltzell to Dr. Ruſh, dated May 2, 1798.

In ſummer and autumn of 1797, a malignant fever, attended with dyſentery, was epidemic in Portland and its vicinity, in the diſtrict of Maine. The dyſentery ſubſided in October, but the fever continued. It appeared in the country, as well as town; and was uſually conquered by the uſe of alkaline remedies. Many of the patients had a yellow ſkin and the predominant ſymptoms of the yellow ſever of our cities. In one inſtance, this diſeaſe put on the form of peſtilence. A merchant, in a country village, where no ſuſpicion of infection could be entertained, was ſeized with a malignant fever; he lingered till the 36th day, and died highly putrid. His nurſe was ſeized and died; after death appeared livid ſpots on the body. A ſervant alſo took the diſeaſe and died. The nurſe communicated the diſeaſe to three perſons in the family where ſhe lay ill.

This laſt inſtance is deciſive evidence that the peſtilential yellow fever not only originates in our country, but in villages, in the 44th degree of latitude, a more temperate climate than that of New-York and Philadelphia.

In the winter ſucceeding, the peſtilential principle ſtill exhibited its effects. The fever continued to prevail, being uſhered in with nauſea, vomiting and chills ſucceeded by heat; but it was generally accompanied with a ſore throat and ſcarlet effloreſcence. It prevailed in almoſt every town in the county.

Dr. Barker's letter, Med. Repoſ. vol. 2. 147.

The year 1798 was remarkable for the moſt general prevalence of the plague of our climate, that has been known; and in ſome cities, the diſeaſe was peculiarly malignant.

The preceding winter had been unuſually long and cold—the May following was dry beyond what is recollected in any former years—June was remarkable for deluging rains, which occaſioned floods in the Connecticut, Delaware and Suſquehannah rivers, which did no inconſiderable injury. Two or three of the firſt days of July were exceſſively hot, and ſucceeded by twenty days of very cool weather—then commenced a long period of the moſt ſultry weather ever known in our climate, accompanied, in ſome places, with great rains.

Catarrhous fevers were frequent in the ſpring, the conſtant forerunners of autumnal ſickneſs. Bilious fevers alſo occurred, in a few caſes very early, indicating the predominant condition of the atmoſphere. In ſummer and autumn, the graſs-hoppers multiplied to ſuch a degree from Pennſylvania to New-England, as to devour vegetables, and eſſentially injure the paſtures and graſs fields.

The peſtilential fever in Philadelphia appeared early in the ſeaſon—a number of caſes in June, and ſtill more in July. In Auguſt early, the city was alarmed and ſoon deſerted by at leaſt three-fourths of its inhabitants. The diſeaſe was unuſually mortal; and extended to the remoteſt parts of the city, where it had not formerly prevailed. Owing to this circumſtance, ſome families ſuffered, which had eſcaped in former years. The number of deaths amounted to about 3440. The diſeaſe, as uſual, abated with the appearance of froſt; but individuals were attacked with it, and carried off, in the midſt of the following winter.

It is alledged by ſome perſons that the fever was introduced into Philadelphia by the ſhip Deborah, which arrived from Jeremie, and anchored near Race-ſtreet wharf, on the 18th of July. It is admitted that perſons who went on board, ſoon after ſickened and died; and ſo did others ſicken and die, without going near that ſhip. The truth is, many caſes of the diſeaſe had occurred three or four weeks, *before her arrival.* The ſhip had loſt people by fever on her paſſage and might be infected; and perſons viſiting her might receive that infection; but theſe facts do not reach the point. The epidemic *began* in all parts of the city, in ſcattering caſes, *previous to the arrival of this fomes*, and had the ſhip never arrived, that epidemic would have ravaged the city. This is evident from the number of its precurſors.

This peſtilential fever carried off fifty-ſeven perſons in the village of Marcus Hook, where the firſt perſons ſeized were a ſhallop-man and others from Philadelphia. But many caſes occurred which could be traced to no infection. See Dr. Sayre's letter in Currie's Memoirs, p. 136. In Cheſter died 50 of the ſame fever.

At Wilmington, in the ſtate of Delaware, thirty miles from Philadelphia, the ſame diſeaſe raged with more than its ordinary mortality. Its victims amounted to 250. It appears that the diſeaſe was introduced by the fugitives from Philadelphia, and by watermen who ply between Wilmington and Philadelphia.

See Dr. Tilton's letter in Dr. Currie's Memoirs, p. 138.

The fever alſo prevailed in New-Caſtle and at Duck creek in the ſame ſtate.

Letters from reſpectable phyſicians, in the public prints, have informed us that this diſeaſe prevailed alſo in ſome parts of New-Jerſey, as at Bridgetown and Woodbury; and eſpecially near the meadows on the borders of the Delaware. From careful examination, it was found that the diſeaſe muſt have originated where it exiſted; no intercourſe having been held with infected places. In ſome inſtances the fever was probably infectious.

At Norwalk in Connecticut ſeveral perſons died of the ſame diſtemper. The phyſicians are doubtful as to its origin; as ſome caſes may be traced to a diſeaſed perſon who had been in New-York. Three caſes however occurred at ſome miles diſtance from the heart of the town, in perſons who had not been in the leaſt expoſed to infection.

M. S. letter from Dr. Betts.

In the firſt week of Auguſt, appeared a bilious fever in New-York, between Old ſlip and Coenties ſlip, in the ſtreet next to the water; a place remarked for great accumulations of filthy ſubſtances. By the exertions of the Health Commiſſioners, in covering theſe nuiſances with freſh earth, this alarming fever ſubſided in that neighborhood, and diſappeared by the 26th of that month.

But on the 12th, the peſtilential fever appeared in other parts of the city, and about the 20th, began to extend and aſſume a more formidable aſpect. The diſtrict of the city, ſubjected to its moſt deadly effects, was that ſection comprehended between

John-ſtreet and Beekman-ſtreet, particularly in Cliff-ſtreet and its neighborhood. The probable cauſe of this effect, was the fetid air from large quantities of ſpoiled beef, ſtored in the cellars in Pearl-ſtreet, on the windward ſide of this ſection. The cellars were filled with water by heavy rains, or were otherwiſe damp; which circumſtance, added to the extreme heat of the ſeaſon, occaſioned a greater loſs of ſalted proviſions, than perhaps was ever before known. To augment the effect, large quantities of pickle had been diſcharged, in the proceſs of repacking beef not yet ſpoiled, but in a bad ſtate, which pickle had been carried by the gutters into a ſewer in Burling ſlip, from which iſſued a very offenſive ſmell.*

About the laſt of Auguſt, the inhabitants of New-York were greatly alarmed; ſome removed from the eaſt to the weſt ſide of Broadway, a part of the city which has hitherto been exempted from the violent effects of the yellow fever; but a great proportion of the people deſerted the city. The diſeaſe was more malignant, than in its preceding viſits, and exhibited more frequently the bubo and carbuncle. It extended over two thirds of the city, and numbered with the dead about two thouſand of its inhabitants. I am informed the diſeaſe was leſs generally characterized with the inflammatory diatheſis, and that veneſection was leſs generally attended with ſalutary effects, than in former years.

This diſeaſe exhibited little infection, beyond the limits of its own amoſphere. In the hoſpital, at a little diſtance from the city, were admitted about 300 patients, ill with that diſeaſe; yet ſixteen nurſes, ſeven waſherwomen, and the boatmen who conveyed the ſick from the city to the hoſpital, *all eſcaped*. Dr. Douglaſs, the attending phyſician, eſcaped the diſeaſe, until October, when he viſited his friends and ſlept *in the city*, three days after which he was ſeized with the fever.

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* There is reaſon to believe, that ſalt, if not ſufficient to preſerve the article to which it is applied, renders it doubly noxious in a ſtate of putrefaction; and that a ſmall quantity of ſalt will accelerate the proceſs of putrefaction. From an experiment related to me by Mr. Moſes Brown of Providence, it is proved that a piece of fleſh, in pure water, will not putrefy as ſoon as in water, in which a few grains of ſalt have been diſſolved.

Do not the ſaline particles of the air, on the ſea coaſt, render the putrefaction of fleſh and vegetables more rapid, and the exhalations more deleterious, than perfectly freſh water? And is not this one cauſe, why peſtilential diſeaſes appear firſt, and are moſt general, in maritime places?

Dr. Cogſwell informs me that a boat-man on Connecticut river, in the hot weather of 1798, contracted a violent fever of which he died, by ſleeping in an open boat, near a quantity of pickle which had leaked out of a barrel of ſalted proviſions. The diſeaſe was of a very malignant kind.

See Letters from the Health-Office, by Dr. Bailey, whoſe zeal, talents and induſtry, in his employment, have rarely been equalled.

The laſt fact is very important towards correcting the popular errors reſpecting the contagion of this fever. In the city perſons took the fever—in the hoſpital they did not. That is, the diſtemper has an atmoſphere, in which it is readily contracted—beyond that atmoſphere, it is not infectious. In other words, it is a *condition of the atmoſphere*, and *not the effluvia from the ſick*, which is to be dreaded.

Thus, in 1797, the fugitives and ſick from Philadelphia did *not* ſpread the fever in Wilmington—in 1798, they did. That is, in 1797 the atmoſphere of Wilmington would not *generate* and *nurſe* the diſeaſe—in 1798, it would.

In Boſton, the diſeaſe began near the town dock and the neighboring wharves, in the month of June; but its moſt violent effects were experienced on the ſouth ſide of Fort-Hill, an elevated part of the town and expoſed to free air. This circumſtance has occaſioned no ſmall ſurpriſe; but as the fever of 1796 began in that part of the town, perhaps we may find the cauſe in the very extenſive flat, between Boſton and Dorcheſter point, which is uncovered at low water; perhaps in the expoſure of that hill to the direct rays of the ſun; perhaps in the nature of the ſoil which is clay of a ſolid texture, and fitted to retain on its ſurface whatever impure ſubſtances are thrown from houſes.

The fever afterwards invaded the north part of the town, and a ſtreet near the pond; ſuppoſed to be excited by noxious exhalations. Some parts of the town, which are low and filthy, eſcaped the fever.

At firſt it attacked the moſt robuſt young men, and the diatheſis was highly inflammatory. Later in the ſeaſon, it attacked perſons of all ages and habits. At firſt it was not infectious, but in the later ſtages of its progreſs, it exhibited infection. It diſappeared with the arrival of froſt, after carrying off nearly 200 patients.

M. S. letter from Dr. Eliot.

See a full account of the diſeaſe in a letter from Dr. Rand, publiſhed by order of the Academy of Arts and Sciences. This gentleman obſerves that no infection appeared, except in places where the diſeaſe was originally contracted.*

Maſſachuſetts Mercury, Feb. 8, 1799.

The ſame malady appeared in Portſmouth, New-Hampſhire, with equal mortality, as far as it extended; but its progreſs was limited to one ſtreet near the water.

New-London, in Connecticut, is ſituated in a very healthy part of the country, on a harbor, whoſe ſhores as well as the ſurrounding lands, are dry and rocky—its population about 3000 inhabitants.

In the laſt week in Auguſt 1798, this town was ſuddenly invaded by the plague of our country, which began in the family of Mr. Bingham, keeper of the Union coffee-houſe. No veſſels from the Weſt-Indies, no ſick from other places, occur, in this inſtance, to help out popular credulity. The idea of importation is abandoned by the citizens of the town. The fever was very fatal within its atmoſphere, which was confined to Bank ſtreet and its vicinity; a part of the city well built, clean and airy as any ſtreet in the town. Within a ſmall ſpace, were fifteen houſes, inhabited by ninety-two perſons—of which ninety were affected with the diſeaſe; thirty-three of this number died, and two only eſcaped the fever. The diſeaſe prevailed about eight weeks and deſtroyed eighty-one lives.

Printed account of the fever by Charles Holt.

On enquiry I find that this diſeaſe in New-London had its precurſors, in ſporadic caſes of the ſame fever, in the three preceding ſummers. In 1795, died Dr. Joſeph W. Lee with all the ſymptoms of the yellow fever. Some inſtances occurred in

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* That is, infection was attached to the *place*, rather than to the *perſons* of the diſeaſed—a fact which is true of every peſtilence.

1796; and in 1797 died of the ſame, Matthew Griſwold, Eſq. and ſoon after his mother; indicating the communication of infection. Yet in theſe years, it did not ſpread and become epidemic. The peſtilential period however was progreſſing in that town, as appears by the bills of mortality; for the ordinary number of deaths does not exceed 60 in a healthy year; but in 1795, the number amounted to 86—in 1796, to 80—in 1797, to 101—in 1798, to 133. Here we obſerve a great augmentation in the mortality of the town, ſeveral years before the criſis of peſtilence, and eſpecially in the year next preceding it. The importance of this fact towards a right underſtanding of the cauſes of epidemic peſtilence, cannot be miſtaken.

Conſiderable quantities of ſalted fiſh, which lay in certain ſtores in New-London, and which had not been well cured with the uſual quantity of ſalt, became fetid and offenſive, altho not putrid, and aſſumed a red caſt with a ſlimy feeling—it alſo loſt its texture and firmneſs. This was opened and ſpread in the ſtreets for the purpoſe of being dried; and from its offenſiveneſs and vicinity to the place where the diſeaſe firſt appeared, it is ſuppoſed to have been an exciting cauſe of the fever. This opinion has doubtleſs ſome foundation; but putrid fiſh will not always occaſion diſeaſe. It is probably true that the bad ſtate of the fiſh was partly owing to a previous bad ſtate of the air; altho it afterwards became a *cauſe* of a *worſe ſtate* of the air.

What ſeems to put this beyond doubt, is, the unuſual number of muſketoes, in the adjacent country, and the multitudes of flies of uncommon ſize, exceeding what had been before obſerved. With theſe phenomena before our eyes, we can be at no loſs to account for the peſtilential fever of New-London.

The uſual lake and river fever prevailed in the ſame ſeaſon, in many of the interior parts of the country; as at Royalton in Vermont, on the Grand Iſles in Lake Champlain, at New-Milford in Connecticut, and in various parts of the ſtate of New-York; in which places, it was attended with conſiderable mortality. Sporadic caſes occurred in all parts, and in the healthieſt ſituations, of the country. In many places, intermittents and dyſentery were unuſually violent and obſtinate.

I have no account of the temperature of the weather in any part of Europe, during the ſummer of 1798; except that in ſome parts of Sweden, the firſt months of the ſummer were exceſſively dry, as the month of May was in America.

A peſtilential fever appeared in Italy in June; but I have no details of its progreſs. It is however to be obſerved that this fever was preceded by a violent earthquake in ſome part of the Tuſcan territories, in the month of May, which did no ſmall injury.

In autumn broke out a peſtilential fever on the Baltic, in Dantzick or its vicinity. The government of Denmark, in conſequence of official information of the prevalence of this diſeaſe, directed all ſhips from Dantzick and the neighboring ports to be watched with vigilance, and appointed a committee of quarantine.

According to the report of a maſter of a veſſel, there was an eruption in Teneriffe in the ſummer of 1798, which laſted ſeveral weeks. This volcano had been quiet for 94 years.

In November and December, the peſtilence in America was ſucceeded as uſual by influenza, which was very prevalent in all parts of the country, and in the ſouthern ſtates attended with ſome mortality. This was merely a change of the form of the epidemic.

The winter of 1798-9 was very long and ſevere in both hemiſpheres. In the United States, it began about the middle of November, with ſnow, and a heavy fall of ſnow on the 18th and 19th was followed by ſevere cold that laſted till the ſecond week in January. From this time, there was a relaxation of cold for about three weeks, and the ice in Connecticut river gave way. But in February commenced ſevere cold, which continued, for the moſt part to the vernal equinox. April was alſo cold; ſevere froſts occurred often, and checked vegetation. On the 2d and 8th of May were conſiderable falls of ſnow, followed by froſt. On the morning of the 4th and 5th, we had ice at New-Haven as thick as window-glaſs. Peaches bloſſomed about the middle of May, and apples were not in full bloom, till the 22d. This long duration of cold exhauſted all the barns of hay and other fodder, and multitudes of cattle periſhed in various parts of the country.

In Europe, the winter was equally ſevere. The rivers in England, Germany, Holland and France were covered with ſolid ice, and at the breaking up of winter, the Rhine roſe and burſt its barriers, inundating many parts of Holland with terrible deſtruction. The ſeverity of the winter was felt even in the ſouth of Italy, and the French and Neapolitan troops ſuffered greatly from ſnow on the Appenine, in the vicinity of Naples. In Siberia, we are informed by the public prints, periſhed whole villages of men and cattle by the ſeverity of the froſt.

In America, the diſeaſes of the winter were characterized by the predominant diatheſis of the reigning epidemic conſtitution, a yellow ſkin and bilious diſcharges. An earthquake of conſiderable extent was felt in the Carolinas on the 12th of April. What will be the ſtate of health in the enſuing ſummer, muſt be left to be determined by the event. The preſent peſtilence has been long and ſevere and the citizens look with impatience, for the uſual ſalubrious ſtate of their atmoſphere.

In Auguſt, about the time the peſtilence began to ſhow itſelf in New-York, immenſe numbers of flies died ſuddenly, and occaſioned no ſmall ſpeculation and alarm. Some were found on the floors; others adhering to the ceilings of rooms, and what is ſingular, their bodies became white. A peſtilential air uſually generates flies in unuſual numbers; but on this occaſion, ſome ſudden change in the elements, deſtroyed their lives. How little do we know of the powers of the elements, and the nature of the alterations in them which produce ſuch aſtoniſhing effects. Will imported infection account for ſuch phenomena?

This is the beſt ſtatement of facts I have been able to make from ſixteen months inveſtigation. It is not improbable that ſome miſtakes have occurred, which more time and more ample materials, would enable me to correct. But I truſt that the ſubſtance of the ſtatements is accurate, and that no error of conſequence will be found to reſult from them, to impeach the general principles ſuggeſted in this work.

POSTSCRIPT.

Additional facts, collected on a journey which I made through the Northern States, while this volume was in the preſs.

IN the autumn of 1732 raged in New-York a malignant, infectious fever, of which died ſeventy perſons in a few weeks.

M. S. of Mr. Alexander.

In 1745 a malignant bilious fever prevailed in New-York, of which died an eminent phyſician of the city, Dr. Nicoll. By the deſcription of the diſeaſe, given to me by a gentleman who was affected with it, there appears to be no queſtion that it was the ſame diſeaſe now called yellow fever.

About this time, for the year is not exactly known, a malignant epidemic diſeaſe laid waſte the Indian tribes. By the deſcription of the ſymptoms, as given by Indian traders, then among the tribes, and ſtill living, it is certain this was the infectious yellow fever. In conſequence of this diſtemper, the Senecas removed their quarters two or three times, in a few years—it being a practice among the natives to abandon the place infected with this plague. The diſeaſe was confined to the Indians—the white people, living and trading with them, not being affected.

In 1746 the Mohegan tribe of Indians, between New-London and Norwich, was waſted by the ſame malady. Dr. Tracy of Norwich now deceaſed, was the only white man affected—he attended them as their phyſician. From Mr. Philemon Tracy, a ſon of the doctor, who has taken the trouble to examin a Mohegan prieſt, a man of good ſenſe and integrity, who was himſelf affected by the diſorder, I have the following account of this peſtilence.—That it appeared in Auguſt and prevailed till cold weather—that about one hundred of the tribe periſhed—that it was the year after the reduction of Cape Breton (of courſe in 1746—and Dr. Tracy's books confirm the dates mentioned by the Indian)—that the patient firſt complained of a ſevere pain in the head and back, which was followed by fever—in three or four days, the ſkin turned as yellow as gold, a vomiting of black matter took place and generally a bleeding at the noſe and mouth, which continued, till the patient died. Theſe are the words of the old Indian, as penned at the time by my informant.

It will be remarked that this was a local peſtilence, the fever being confined to a ſingle tribe of Indians and not prevailing in the neighboring towns. But it will be remarked alſo that this was the ſame year, it prevailed in Albany, when the bills of mortality were generally high.

I have aſcertained that the canker-worm, which lately ravaged the fruit trees in New-England, appeared as early as 1788 or 1789.

A fatal malignant diſeaſe raged among the tribes of the Mohawk Indians, about the year 1776, and reduced ſome of them to a few men.

From Dr. Wheeler of Redhook, on the Hudſon, I learn that the angina ſcarlatina appeared there in January 1789 and prevailed till April—it prevailed alſo in the two ſucceeding winters.

The influenza, in that year, firſt appeared there about the middle of October, and prevailed two months, among all ages and both ſexes. Catarrhal coughs have been prevalent every year, ſince that time. In the ſpring of 1793, angina ſcarlatina, mumps and catarrhal coughs prevailed till June, and diſappeared. Soon after commenced the remitting fever. In ſome caſes the paroxyſms invaded the patient in the form of madneſs.

The reader will note that in our interior country, the remitting fever of that diſtinguiſhed year, 1793, had nearly the ſame ſpring precurſors, as the yellow fever in Philadelphia.

The meaſles at Redhook in 1795, partook of the character of the preceding epidemic fevers; beginning with a highly inflammatory diatheſis, and ſometimes ending in typhus, with petechiæ, vibices and hemorrhagy. Pleuriſies had the ſame character.

At Brattleborough, on the Connecticut, a family by the name of Morgan were ſeized in 1791 with a fever of the typhus kind, and ſix of them died. Several perſons who viſited the family took the diſeaſe and died, and there its progreſs ended. The family reſides in a healthy ſituation, near a ſmall active ſtream of water; and no viſible cauſe could be aſſigned for the origin of this diſtemper. Theſe facts are taken from Dr. Hall of that town. It will be remembered that this was the year when autumnal diſeaſes firſt put on the malignant aſpect of our late peſtilence, when the plague broke out in Egypt and the yellow fever in the Weſt-Indies began to aſſume what Dr. Chiſholm calls unuſual ſymptoms.

Dr. Center of Newport informs me that in 1798 occurred in that place many caſes of a bilious fever bearing ſome reſemblance to the infectious fever; and one caſe of decided carbuncular and glandular plague, in a man of robuſt conſtitution. There is no pretence of foreign origin, in any of thoſe caſes.

From ſundry gentlemen living in Chelſea, a village at the landing in Norwich, I learn that two or three caſes of malignant bilious fever occurred there in 1798, marked with the uſual ſymptoms of the infectious fever. Some of theſe caſes could not poſſibly have been derived from infection. One of the patients might have contracted his diſeaſe at New-London.

Dr. Holyoke of Salem, in Maſſachuſetts, informs me that in 1798, many caſes of malignant bilious fever occurred in that town, which could not have been derived from infection.

From Dr. Woodruff and Dr. M'Clellan of Albany, I learn that ſeveral caſes of malignant bilious fever appeared in that city, in 1798, marked with all the ſymptoms of the peſtilence of our cities and which muſt have originated in that place. About one half who were ſeized, died.

The firſt caſe of influenza at Albany in 1789 is noted by Dr. M'Clellan to have occurred on the 30th of September. This was preciſely the time of its appearance at Philadelphia, and a little after its firſt appearance at New-York. In the country, between New-York and Albany, it did not appear till a week or two later. Theſe facts prove that this diſeaſe falls on diſtant places at the ſame time.

The ſcarlatina anginoſa appeared at Albany in the winter and ſpring of 1793, about the time it did in New-York and Philadelphia.

In every part of our country, one remark has been made by phyſicians, that from the year 1792 or 3, intermittents and remittents have become more numerous and obſtinate, and attended with unuſual ſymptoms. In many places, theſe diſeaſes have been multiplied in a ten-fold ratio; elucidating the principles of the great Sydenham, relative to "Conſtitutions of Air," and demonſtrating the exiſtence of a general cauſe in the inſenſible properties of the atmoſphere, to which we may and muſt aſcribe the peſtilence of our maritime towns.

In 1798 multitudes of dead pike were obſerved to float down the Mohawk and Hudſon.

From Dr. Thatcher I learn that for ſome years paſt, an autumnal fever has prevailed in Plymouth, in Maſſachuſetts, of the remitting kind, with low typhus ſymptoms. In winter it takes the type of the nervous fever. It was very prevalent in 1798 in that and a neighboring town.

From Dr. Smith of Hanover, in New-Hampſhire, and Drs. Green and Traſk of Windſor, in Vermont, I have obtained information reſpecting a very infectious fever which prevailed in thoſe towns and the vicinity in 1798. This diſeaſe is deſcribed by Dr. Spalding in the Medical Repoſitory, vol. 3. p. 5. It approaches nearly to the typhus mitior of Cullen, but the fiery red eye at the invaſion ſeems to indicate its alliance to the infectious fever of our cities; and it reſembles the diſeaſe known by the popular name of long fever.

This fever, in Windſor and Hanover, was preceded by dyſentery of uncommon malignancy in 1797, which, in Windſor, was attended with an unuſual inflammation of the lungs. The diſeaſe which preceded theſe epidemics was the ſcarlatina anginoſa, which was very prevalent in 1796.

It is worthy of notice that in all parts of our country, the autumnal infectious fevers have had precurſors in other epidemics, eſpecially catarrhal complaints and anginas. I do not find an exception to this remark.

This fever at Windſor deſerves further to be noticed for its infectious or contagious quality. It was far *leſs* fatal, but *more* infectious than the yellow fever of our cities. Nurſes often took the diſeaſe, and when they returned to their dwellings in diſtant towns, rarely failed to communicate it to the whole family. This is a phenomenon rarely, perhaps never exhibited by the peſtilence of our maritime towns, which has an atmoſphere of its own out of which it is not communicated.

I have examined perſonally the poſitions of many of the towns where this fever and dyſentery have been moſt prevalent, and I find no where any marſh that can rationally be ſuppoſed to originate theſe diſtempers. In general the towns are ſituated on a baſis of clay, between high ridges of land or mountains, where the heat of the ſun is greatly concentrated, and on the margin of rivers. To this deſcription, there are ſome exceptions as to the ſoil; ſome towns being on ſand or gravel. The neighborhood of freſh ſtreams of water cannot be admitted as a cauſe of theſe fevers—nothing being more ſalubrious than ſuch ſtreams. But I am perſuaded from careful obſervation, that, under a peſtilential conſtitution of air, great heat is the immediate exciting cauſe of autumnal fevers, in ſituations not expoſed to marſh effluvia.

With reſpect to the origin of the peſtilential fever in Portſmouth, in 1798, the facts are as follow.

A laboring man, who was given to liquor, received his wages on Saturday evening. He was ſeized with the malignant fever, and died on the next Wedneſday. While he lay ill, a veſſel arrived which had loſt a man or two by the fever on her voyage, but no perſon was ill on board, at the time of her arrival. Some of the perſons who afterwards died of the fever, had been on board of that veſſel; but whether they took the diſeaſe from infection or not, cannot be known. The firſt caſe occurred *before* the arrival. This is an agreed point. I have theſe facts from two of the principal gentlemen of that town, one of them a reſpectable phyſician; the other, the perſon who paid the wages to the man who firſt died. All my enquiries have been made at the ſources of correct information; and I find every where *popular reports* are falſe or incorrect. Yet popular reports are received as truth by many phyſicians and writers, and are made the baſis of falſe and pernicious theories, both in America and Europe.

The fever in Portſmouth was limited in its progreſs to the northern part of the town. In the ſouthern part, at the ſame time, prevailed a malignant dyſentery, which was as mortal as the fever in the northern part. The line of diviſion was drawn by a wide ſtreet or ſquare on which ſtands the court-houſe. The ſcarlet fever had been prevalent in the town for two years preceding.

In 1799, the preſent ſummer, many perſons have taken the peſtilential fever from veſſels arrived from the Weſt-Indies; but in moſt, or all caſes, the fever has become extinct, without any conſiderable mortality. In Boſton, the mortality was limited to two or three perſons.

The caſe at Newburyport was ſingular. A veſſel went and returned from the Weſt-Indies, without a caſe of malignant fever; but as ſhe arrived at the mouth of the river Merrimack, 18 days from St. Thomas's, a boy was ſeized with the fever, and afterwards one or two others. Several perſons took the diſeaſe and died; but people left the vicinity, and the diſorder became extinct. This was a fever generated on board of the veſſel.

The beginning of the ſummer of 1799, tho late, was favorable to vegetation, and the firſt crops were good. Wheat, which had been blaſted, for ſeveral preceding years, in the eaſtern ſtates, was excellent.

But in July commenced a moſt diſtreſſing drouth, in all the northern ſtates; and particularly in the middle ſtates, and the interior country; by which the maize, buck-wheat and potatoes were greatly injured. In ſome parts of the ſtate of New-York, the maize was totally deſtroyed.

Over the eaſtern ſtates, a ſpecies of caterpillar of ſmall ſize appeared in unparalleled numbers, covering the wild cherry-tree, the apple, the willow, the aſh, and the hickory. In ſome parts, a large caterpillar, with variegated colors, ſtripped the black oak of all its leaves. Graſs-hoppers were as numerous as the blades of graſs, and in ſome places, injured greatly the graſs and other vegetables. But eſpecially to be noted were the ſmall toads of the color deſcribed by Fernelius, "Coloris cineritii" like aſhes; of the ſize of a filbert, and in numbers not to be eſtimated. Theſe were numerous alſo in 1798. They anſwer the deſcription of thoſe which medical writers of former ages obſerved to be the forerunners and companions of peſtilence. At what time they appeared and diſappeared, is not exactly known—they were moſt generally obſerved in July.

In the ſpring prevailed influenza or catarrhal fevers; in ſome places cynanche maligna; and generally rheumatic complaints, and ſlight ulcerations of the throat. In many places, the fevers of winter were characterized with a yellow ſkin and bilious diſcharges. All theſe marked the continuance of a peſtilential atmoſphere.

The plague ſhowed itſelf early, in ſcattered caſes, in Philadelphia; but diſappeared, to the unſpeakable joy of the inhabitants. Alas! When ſuch caſes appear in July, and eſpecially if other diſeaſes in winter and ſpring manifeſt ſymptoms of the prevailing epidemic, it is hardly poſſible that our cities ſhould eſcape a peſtilential fever in autumn. This terrible ſcourge renewed its ravages in Philadelphia and New-York; and in various parts of our country, bilious fevers appeared with malignant ſymptoms.

At Hartford, on the Connecticut, appeared the malignant fever in Auguſt, to the ſurpriſe of the inhabitants and of the ſtate. People who have no juſt ideas of the nature and origin of this diſeaſe, attempted to find the cauſe in ſome veſſel from the Weſt-Indies; but being diſappointed, reſorted to a ſmall coaſting veſſel. On examination it appears, that this veſſel was uſed as a market boat between Connecticut river and New-York—the maſter had died in June, but of what diſeaſe, I am not able to learn. Another maſter took poſſeſſion of her, and finding her very dirty, with the remains of various vegetables, he overhauled her and gave her a thorough cleanſing. He took in at New-York a cargo of ſalt, and ſailed to New-Haven, where the veſſel lay ſome time, about the middle of July. Here the ſalt was purchaſed by a merchant of Hartford, and the veſſel ordered round to that place, where ſhe arrived and diſcharged her cargo, in the beginning of Auguſt. From the time the veſſel left New-York, to the time of diſcharging the ſalt, muſt have been from four to ſix weeks. After leaving Hartford, and going down the river, the maſter and mate of this veſſel were ſeized with the fever and died. Inſtead therefore of being *imported*, the fever was *exported*.

Some attempts were made to trace all the firſt caſes of the fever to that veſſel; but it does not appear that more than one perſon who had the diſeaſe, was ever on board; and it is *proved* that moſt of the perſons affected were never near that veſſel and never viſited the ſick. It is proved further that of ten or twelve perſons employed in unloading the veſſel, not one was ever affected by the malady. Yet even in this caſe, the ſilly tale of importation is ſwallowed with eagerneſs by the advocates of that doctrin.

I confeſs myſelf weary and aſhamed of refuting ſuch groundleſs opinions and ſurmiſes; but it is a taſk which truth and juſtice and public happineſs demand. The truth is, the ſpot where this fever aroſe, is low ground, retaining water to ſtagnate after the ſpring floods—built upon in a crouded irregular manner—extremely filthy—penetrated by a creek which has been dried and neglected, and become the reſervoir of every unclean thing—in the vicinity is a ſlaughter-houſe, where loads of garbage contribute to render the air foul and noxious. Let any man walk over the ground and examin it with care, as I have done ſince the fever, and he will be convinced that no imported fomes was neceſſary, in that place, to breed a peſtilence.

But one of the ſtrongeſt arguments to prove the domeſtic origin of the malady, is, what people rarely conſider. Numerous fevers of the remitting kind, and typhus mitior, have originated on the ſame ground, for ſeveral years paſt; and in 1798, two caſes of malignant yellow fever—one of which terminated in three days. Theſe fevers marked the predominant ſtate of that local atmoſphere, and decide the queſtion of domeſtic origin.

On the 15th of July a tremendous hail ſtorm paſſed over Connecticut from the weſtward, attended with violent wind and thunder. The ſtones and pieces of ice were of various ſizes, from that of a walnut to that of a hen's egg. In Goſhen, Cornwall, New-Hartford, &c. on the weſt, and Lebanon, Franklin, &c. on the eaſt of the Connecticut, the graſs, corn and every green thing was injured or deſtroyed; glaſs was broken, trees galled, and ſmall animals killed. The champain country on the Connecticut was leſs injured. This ſtorm, unexampled in Connecticut, reſembles numberleſs hail ſtorms deſcribed in hiſtory, as the precurſors and companions of peſtilence.

END OF THE FIRST VOLUME.